

PAGES

MISSING

The Educational Review.

Devoted to Advanced Methods of Education and General Culture.

PUBLISHED MONTHLY.

ST. JOHN, N. B., DECEMBER, 1890.

\$1.00 PER YEAR

A. H. MacKAY, B. A., B. Sc.,
Editor for Nova Scotia.

ALEX. ANDERSON, LL.D.,
Editor for P. E. Island.

G. U. HAY, Ph. B.,
Editor for New Brunswick.

SUBSCRIPTION PRICE:

Twelve Numbers, \$1.00
Single Copies, 10 cents

Subscriptions payable in advance. Send money by money order, or by bank bill in a registered letter. All remittances acknowledged by postal card.

The Review is issued from the office of Barnes & Co., St. John, to whom subscriptions may be paid if convenient.

CONTENTS:

EDITORIAL NOTES	105-110
EDITORIAL	110-111
An Important Meeting N. S. Normal School The Metric System School Grounds.	
SCIENCE SERIES	111-114
Formdale School: World Weights and Measures—Astronomical Notes.	
CONTRIBUTED ARTICLES	114-121
Suggestions for the Public School Course: Notes for Teaching Music Temperance Book Knowledge Indispensable Teachers' Work—A New Snake Food Kindergarten Methods in Primary Schools "The Missing Link" Patriotism in Schools.	
SELECTED ARTICLES	121-122
Monument to Columbus Grammar Glaciers A Practical Geometry Lesson Tea and Coffee.	
School and College N. S. Academy Entrance Examinations, 1890	
Question Department	123
Book Reviews	124
NEW ADVERTISEMENTS	
Annual Convention N. S. Educational Association (p. 125) Prospectus of Magazines (pp. 125, 126) Xmas Presents, A. & J. Hay (p. 126) Littell's Living Age (p. 126) Ontario Business College (p. 127) Ronald Gillis (p. 128).	

The Educational Review is published about the 15th of each month. Any subscriber failing to receive it by the 25th should notify us of the fact. Subscribers wishing a change of address should give the former as well as the new address.

In future all correspondence and business communications, including payment of subscriptions from Nova Scotia and Newfoundland should be addressed to Editor EDUCATIONAL REVIEW, Halifax, N. S. All other communications, including subscriptions, should be addressed Editor EDUCATIONAL REVIEW, St. John, N. B.

EDITORIAL NOTES.

THE Annual Convention of the Nova Scotia Provincial Educational Association meets in the metropolis of the Province this time, and on the last three days of the year. The usual arrangements for reduced fares, we presume, are made. Teachers from the whole province will, no doubt, find the occasion useful also for sight seeing and for business. The programme, printed in another column, shows that it will be one of the most important conventions of the association yet held. The array of educational talent is, indeed, an imposing one, and will attract, no doubt, a correspondingly large number of those engaged in educational work.

We take this opportunity to wish our subscribers, one and all, A Merry Christmas and A Happy New Year.

We draw attention to the advertisements in this month's issue. The REVIEW is becoming every month a more valuable advertising medium.

We are obliged to hold over several articles and communications intended for publication in this issue. Correspondents should see that their favors are sent on or before the first of the month to secure insertion in that month's issue.

OUR criticism of some possibly remediable defects in the Nova Scotian educational administration has aroused some discussion in the Halifax press; but it has done good. It shows that both parties are alive to the importance of educational matters; and of all provincial matters none is of greater moment in itself. It is the provincial question. The government is disposed to do the best possible; but the great difficulty in every complex matter is to rectify one evil without producing another.

WE publish in another column the first part of the excellent paper on Patriotism, read by Inspector Brydges at the Provincial Institute at Moncton. The lack of a Canadian national song, one defect referred to by Inspector Brydges, has been supplied. "My Own Canadian Home," by Mr. E. G. Nelson, of St. John, set to music by Mr. Morley McLaughlin, has the sentiment of true patriotism and has become deservedly popular. The St. Croix Soap Manufacturing Company has made a beautiful reprint of this song, and with a modesty that is as delicate as it is rare have placed their advertisement on a back page where it does not in any way offend good taste nor mar the effect produced by the beautiful title page of the song. The company has generously presented a copy to each teacher in the dominion and to the scholars of the principal schools—nearly 100,000 copies in all.

The Executive Committee of the N. B. Educational Institute will meet at Fredericton during the last week in December.

James Hannay, Esq., author of the History of Acadia, is now engaged on a new work to be issued in February next, entitled, The Life and Times of

Sir Leonard Tilley. The book, which has been undertaken with Sir Leonard's approval, will be, practically, a history of New Brunswick for the past seventy years. Those who have read Mr. Hannay's charming History of Acadia will welcome this work from his pen.

TEACHERS and candidates for the teaching profession in Nova Scotia will be interested in the following notice:

CORRECTIONS

1. The optional Latin requirement for Grade B Syllabus should read, "Candidates for Grade B, IV, and V should read, *Compendium Latinæ Grammaticæ* by J. J. G. de Vries, printed in *Journal of Education*."

2. The requirements in Physics, Grade B Syllabus, should read, Chapters I, II, and IV, of Gage's *Physics*, 1891, and not "The first three chapters," as printed in *Journal of Education*.

Education Office,

DAVID ALLISON,

Halifax, Nov. 12th, 1891.

AN IMPORTANT MEETING.

The National Education Association of the United States has accepted the invitation of the Ontario Educational Department to hold its next meeting in Toronto. A note to the REVIEW, just received from Mr. Ray Greene Huling, President of the American Institute of Instruction, states that this association has received a formal invitation to meet at Toronto with the National Association, July 13-17, 1891. There is no doubt but that the Ontario department will extend invitations to the different Provincial Institutes throughout the Dominion to be present at this notable meeting. Instead of three great educational gatherings, as outlined in the September REVIEW, there bids fair to be only one—that at Toronto. Canada should be represented at the gathering, and in such a way as will allow our educationists to meet and, if deemed advisable, form a Canadian Educational Association. A correspondent expresses the necessity of this when he says: "Much good ought to result from such a meeting, particularly in breaking down sectional exclusiveness. Canada needs more educational unity."

N. S. NORMAL SCHOOL.

The opening of the Nova Scotia Normal School at Truro took place November 13th. Dr. Calkin, in his opening address, said he hoped the time was at hand when the work done in the Normal School shall be restricted to the more purely professional. Dr. Hall was welcomed by the students and gave a brief outline of what he had observed during a year's visit to Germany.

We were sorry to learn of the resignation of Frank H. Eaton, Esq., A. B., professor of mathematics and science in the Nova Scotia Normal School. H. G. Creelman, Esq., B. A. (Dal.), a Gilchrist scholar who

has just returned from Berlin after studying for some years in Edinburgh with brilliant success, and later in Germany, has been appointed to the vacant post for the present year. The government have been fortunate in securing the services of an accomplished and experienced educationist for the permanent position in the person of A. G. MacDonald, Esq., A. M., inspector of schools for the counties of Antigonish and Guysboro. Mr. MacDonald is a graduate of St. Francis Xavier College. He took a special course at McGill University in mathematics and science, thus especially qualifying himself for a professorship in his alma mater, which position he held with distinguished success until appointed to the inspectorship. Mr. MacDonald's scholarly qualifications, his practical knowledge of the conditions of school life in the province, and his very genial manners, will ere long, we predict, make him as popular throughout the province as he has hitherto deservedly been in his eastern section.

W. H. Magee, Esq., a distinguished undergraduate (fourth year) of the University of Dalhousie, a former principal of the Digby County Academy when it was bearing off more than the average share of Munro prizes at Dalhousie, is now filling the vacant mathematical chair in the Normal School at Truro, Mr. Creelman's health not being yet sufficiently restored since his return from Berlin to make it advisable to resume work immediately.

THE METRIC SYSTEM.

We call the attention of our educational authorities and other teachers to the fact that the metric system of weights and measures is now adopted in nearly every country on the face of the earth—the majority adopting it exclusively, Great Britain, Canada and the United States permissively. In the latter countries it is coming into use in the universities, laboratories, technical schools, etc.; but in Canada no attempt has yet been made to popularize it. It has been legalized for about twenty years now in this country; and so fossilized are our old leaders of educational matters that the metrical system is deemed to be so difficult that it is kept for the high school or our higher grades of teachers, instead of being as it was intended, introduced into every school, even the primaries, and from the schools into every home. If any person pooh-poohs this, mark him. The metric names are easy, the units are convenient, and the computations are, of course, the maximum of simplicity. Every live teacher will immediately prepare for the immediate future by becoming perfectly familiar with the metric system without one term's delay. We will help you for a few months.

School Grounds.

As one approaches the village of Westfield, from Saint John, a pretty school-house on the left side of the road attracts his attention. It occupies an elevated position, overlooking the broad expanse of the Saint John, with the pretty village of Westfield in the foreground. An uncared for and neglected school-house—a too common sight unfortunately—would be a blot on this fair picture. Instead we see a well proportioned building, neatly painted, well kept grounds, and flowers in every window. A single glance from the car window as the express rushes past, is sufficient to suggest refinement—on the part of whom? Why, of all concerned: The inspector of the district, for one sees other evidences of the same character along this route; of the trustees, for they have become interested and supplied the funds to meet the expense; of the teacher, for the same swift glance shows a touch here and there that has been put on and kept up day by day as good taste and an eye to pleasant surroundings would suggest.

We welcome the promise that such evidence as the above affords, of a time when an uncared for and shabby school-house will be reckoned a disgrace to the district that maintains it. Arbor day is doing much to bring about a better state of things; but arbor day, unfortunately, in some sections is only one day, a day when a good deal of sentiment is wasted in speeches and recitations, but the old rut is dropped into the following day to be pursued till another arbor day comes round when the same farce of speeches and recitations, planting trees to remain uncared for, will be enacted over again.

But the most indifferent cannot long remain unaffected when there is a steady increase of well kept and tastefully ornamented school grounds. Teachers, school officers and school children will follow the example that is beginning to be set and the influence will extend to whole communities.

LITTELL'S LIVING AGE FOR 1891.—For nearly fifty years this standard weekly magazine has afforded to its readers the most convenient and satisfactory means of keeping abreast with the best literature of the times. With the constant growth of this literature, the importance of *The Living Age* has steadily increased. It is unrivalled in its field, and is invaluable to every one who, in these busy times wishes to keep pace with the literary and scientific progress of the age. Its prospectus for 1891 is well worth attention in selecting one's reading-matter for the new year. Reduced clubbing-rates with other periodicals are given, and to new subscribers remitting now for the year 1891 the intervening numbers are sent *gratis*. Littell & Co., Boston, are the publishers.

FERNDALE SCHOOL.

WORLD WEIGHTS AND MEASURES.

Take thy balance, if thou be so wise,
And weigh the wind that under heaven doth blow;
Or weigh the light that in the east doth rise;
Or weigh the thought that from man's mind doth flow.

SPENSER.—*Fairie Queen*, Bk. V., Cant. II., st. 43.

I.

T. Are your "reduction" tables of weights and measures used in every country in the world?

S. In English countries they are, I should think.

T. Had the English people more than one table for the same kind of weight or measure?

S. Yes; even yet we have Troy, Apothecary and Avoirdupois weight in our tables, not to mention long and short avoirdupois.

AN. S. And lineal, and cloth measure, not to mention the different kinds of cloth measures that used to be, English ells, Flemish ells, etc.

AN. S. And Dollars, and Pounds, Shillings, Pence, and Farthings, and Crowns and Guineas, etc.

T. Very true; and every other country had about as many varieties of its own kind, which made calculations for commercial people far more laborious than it otherwise would be.

S. And for the scholars in school, too?

T. Of course. We want two things, then. 1st, one set of tables for every country in the world; 2nd, the simplest possible kind of tables. It might be best to take the size of the world to give a starting point for a common measure for the use of the world.

S. It would be a very big measure, would it not?

T. Yes; but it should suit a Frenchman, a Russian or German, as well as an Englishman. You can call the system an English one on that plea. The Frenchman will call it French on the plea of priority of invention; and most of the other nations of the world can call it by their own name on the plea of its adoption and use.

S. And why have we not the system?

T. We have in law, although not in use. In 1864—the year of the introduction of our free school system in Nova Scotia—this system was made legal in Great Britain, as well as the common Imperial system which we generally use yet in Canada.

S. And is the new system legal in Canada?

T. Yes; for about twenty years. Don't you think it is about time we should commence to make the system popular?

S. Yes; it should have been done twenty years ago. But how do they take the world itself as the basis of the new system?

T. In 1799 a very accurate series of measurements to determine the circumference of the world was

completed. It was found that a long pace, nearly four inches longer than our yard, repeated 40,000,000 times, would circle the world. That is, the distance from the equator to the pole would contain 10,000,000 of these long steps. This long step we name *metron*, from the Greek word *metron*, "a measure." The meter is, therefore, the *unit* of the new system. Now, who will tell me how many meters in a quadrant of the earth—that is—

S. A quarter of the earth's circumference—10,000,000.

T. Now, I mark the length of the meter on the board, and also on the floor. See if you can step a meter, from toe to toe, or from heel to heel.

(Several try.)

T. Now, I give you an exercise for to-morrow. Practise stepping meters. I will examine you in this way. I will take you a distance from the school house and ask each one to judge the number of meters he is distant from the building. I will record your estimates, then measure the number of meters. I will give 100 marks to any one not one meter astray; take two points for an error of *one* meter, four for an error of *two*, etc. Now, we shall see who will come off best.

II.

T. To-day we take up the subdivisions of the meter. I see quite a number of you can step a meter pretty accurately. How many such steps will go around the world?

CHORUS. 40,000,000.

T. Now here we have a tenth of a meter. Each one must take home with him an accurate copy of it. Ten of them will make a meter. Now, if I give you the fraction $\frac{1}{10}$, what would you call it?

S. A decimal.

T. What do you mean by that?

S. That the digit coming after the decimal point means tenths of a unit; a figure in the next place a tenth of a tenth and so on.

T. You have nothing new to learn then. *Deci* always means a tenth in this system. What might we call this measure, then?

S. Decimeter.

T. Correct. The meter is a natural measure. You found it to be a convenient length for pacing. Is the decimeter a convenient unit for any purpose?

S. Yes; it is about the breadth of the palm of the hand.

T. That depends on its size, of course. But you are quite right. "Palm" and "hand" were old

units of measurement,—very convenient for rough estimations. So is the decimeter—it is an approximate hand-breadth. Now let us estimate how many decimeters high this desk is—this blackboard—this room?

(All join in estimating.)

T. What do we call the hundredth part of a dollar?

S. A cent.

T. Join the word with an *i* to meter as in our last case, and what shall we have?

S. Centimeter.

T. Very good. The centimeter is the tenth part of —

S. Of a decimeter.

T. Will it make a convenient natural unit?

S. Yes; it is about the breadth of the little finger.

T. Very good. The top of the little finger comes pretty near it. How many centimeters long is this pencil—that one, etc.

(All join in estimating.)

T. What is the tenth part of a cent?

S. A mill. The tenth part of a centimeter would therefore be a *millimeter*, I suppose?

T. Quite correct. I see you have nothing exactly new to learn in these words. Can you find any convenient natural measure nearly a millimeter?

S. The thickness of a stout thumb nail.

ANOTHER S. Nearly the thickness of a new ten cent piece.

T. Supposing a ten cent piece to be one millimeter in thickness, how many form a pile one meter high?

S. 1,000.

T. How many ten cent pieces in a rod of silver of the diameter of a ten cent piece which would encircle the world?

S. 40,000,000,000.

T. Measure the length of the school room.

S. (Measuring.) Nine meters, seven decimeters, three centimeters, and eight millimeters.

T. Can it not be written down more shortly?

S. Yes; 9.738.

T. Very good; that is a good illustration of the neat way in which our new measure can express lengths. A mile is equal to 1609.315 meters. Read this,—not as a decimal.

S. Sixteen hundred and nine meters, three decimeters, one centimeter, five millimeters.

T. Is it necessary to read the number this way?

S. No; it might be read in meters and decimals.

T. Well, I expect each one of you to take these measures home with you, and to make measures equal to them to be used for measuring things about the house or farm. We will soon then have plenty to buy cheaply at the store,—when it is found people want them.

Astronomical Notes.

On Christmas morning three years ago, from an hour before sunrise until an hour or more after it, there was many an eye turned towards a beautiful star which shone above the south-eastern horizon. On Christmas morning this year the same beautiful star may be seen shining above the same quarter of the horizon. Three years ago people called it the star of Bethlehem. Perhaps they will call it that this year also. Perhaps it was the star of Bethlehem. Flammarion thinks this is the best of the various hypothesis that have been made on that famous star.

Star of Bethlehem or not, it is a beautiful star, the most beautiful we ever see in the heavens. Homer paid it the same compliment in his time. It is as evening star that he speaks of it; but, perhaps, it looks even lovelier in the morning sky. See Maud's lover's description of it in his "Come into the garden" song.

You may see it in the morning sky even before Christmas. Its brilliancy is increasing, and will continue to increase for a fortnight after Christmas. Then it will gradually become less bright, but will continue bright enough to be seen in full daylight for several months.

Mercury is evening star now, and at the end of the month he will be brighter than he has been as evening star since April last. But he is not nearly so well placed for observation as he was then — too far south and too near the horizon.

Mars and Jupiter are still the most conspicuous objects during the early evening. Their conjunction on November 13 must have been a fine sight. Here the evening was cloudy, and not a glimpse of the planets was to be had. I fully expected this; for, ever since I began writing astronomical notes for the REVIEW, the evenings have been cloudy or foggy whenever anything particularly interesting was going on in the heavens. It was not so before.

Jupiter will be evening star until the middle of February, and may be seen in the southwest after sunset until within a month or so of that time.

Mars is speeding eastwards among the stars so much faster than Jupiter that the sun won't overtake him until the end of next July; and he will be evening star until that time. But he is no longer the splendid object he was during the summer and autumn. His brightness now is just about the tenth of what it was in June. It is still decreasing, and by the end of his evening star season will be only a fourth of what it is now.

Saturn has been a morning star since the end of

August, and will be so until the beginning of March. But in the middle of December he may be seen about an hour before midnight, and at the end of the month he will rise about 10, a little to the north of east. He is in the eastern end of Leo.

Uranus is a morning star, and not worth looking for at present.

Neptune is worth looking for, if for nothing else than to be able to say that you have seen this farthest off member of the solar system; and this month and the next three will be a very good time to look for him. He is in Taurus, between Aldebaran and the Pleiads; more precisely, between Epsilon Tauri and the eastern Omega, a little to the right of the middle of a line joining these two stars. But you'll never find Neptune from this. What you want — besides your field glass — is an almanac, a star-map, some patience, and some judgment. As Neptune shifts his place among the stars very slowly, it is not easy to pick him out from among the 8th and 9th magnitude stars near him, but once picked out it is quite an easy matter to hold him and follow him for the four or five months that he remains in the evening sky. Here are his positions for December 15, January 1, and January 15:

Dec. 15.	R. A., 4h 13.1m.	Decl. N. 19d 29m.
Jan. 1,	4 11.4	19 25
Jan. 15,	4 10.3	19 23

He's retrograding at present, you see — moving to the right. He will continue this motion until Feb. 13. For a week or two about that time you will hardly be able to detect any motion at all in him. When you do next detect it you will find that he is moving to the left. In the middle of March he will be back to his place for January 15, but a little farther north.

* * * *

In the September REVIEW there was a short description of the heavens as they appear to a place in north latitude 45 degrees at XXI. o'clock sidereal time. On September 20 this hour coincided very nearly with 9 p. m. mean time. On December 20 it will coincide very nearly with 3 p. m. At 3 p. m. on December 20 the same stars and constellations will be above our horizon as were above it at 9 p. m. September 20, and they will occupy the same positions. By the time 9 p. m. comes round on December 20 there will be some change. It will then be III. o'clock sidereal time.

Let us compare the heavens at III. with what they showed at XXI.

Of the brightest stars we saw at XXI., Arcturus, Altair and Fomalhaut have gone; and of the constellations — Corona, Hercules, Ophiuchus, Aquila, Sagit-

tarius and Capricornus. All the others mentioned in the September article are still above the horizon, but in different positions. You should look them all up and exercise your eyes and your understandings in recognizing them in their new positions. Above all don't fail to look at Cygnus. There is something about it that looks more striking at III. than at any other sidereal hour. What it is you will see when you look. And don't run away with the notion that 9 p. m. December 20, is the only time when you can see the heavens as they are at III. This hour, like every other sidereal hour, comes round once every day—twice a day sometimes—III usually does so on Guy Fawkes' day; it did so this year. A week *before* December 20 the hour III. will fall half an hour *after* 9, a week *after* December 20 half an hour *before* 9, and so on.

Now look at the new objects that have come in sight between XXI and III. At XXI the Pleiads were above the north-east horizon. At III. they are nearly on the meridian, just a little east of it, and about two-thirds of the way from the horizon to the zenith. There was a map of, and an article on this group in the REVIEW for January, 1890. Below and to the left of the Pleiads is a bright red star named Aldebaran. It is one of a cluster called the Hyades; they form the letter V. Aldebaran is at the end of one leg of the V, the star at the end of the other is Epsilon Tauri. Between Epsilon and the Pleiads you may see—if the moon is not too near—two small stars dividing the space into three not quite equal parts. The one of these nearest to Epsilon is Omega. It is between Epsilon and Omega that Neptune is at present.

A line from the Pleiads down through Aldebaran will bring you to Orion. If you don't know him already, note the three stars close together and nearly in line with Aldebaran. That's Orion's belt. Above this are two bright stars, one of them red, and of the first magnitude. This one is Alpha Orionis. Below the belt are two other stars forming a quadrilateral with the other two. One of these is also of the first magnitude. It is Beta Orionis, still better known as Rigel. Run your glass down the row of small stars hanging below the belt and you will see Orion's famous nebula. Orion is far too grand an object to be disposed of in a mere paragraph. Perhaps next month or the month after he may get an article all to himself.

Below Orion, and in line with his belt, you will find the brightest of all the stars. It has several names. One is Sirius, another the Dog Star, another Alpha Canis Majoris. Like Orion it deserves a whole article, and may some day get it.

Round towards the east and higher up than Sirius is the little Dog Star, also called Alpha Canis Minoris. Another of its names is Procyon, Greek for "before the dog," so-called because in Greece as in Canada it rises before the Dog Star. To the south of north latitude 25 degrees Procyon rises after Sirius.

Procyon, Sirius and Alpha Orionis make a large equilateral triangle.

The twins, Castor and Pollux, lie farther east than Procyon and higher up—about half-way between Capella and the east point of the horizon. Capella was one of our XXI. hour objects; at III. it is high up, the brightest star to the east of the zenith. Of the twins the lower and brighter one is Pollux, the other is Castor.

Half way between Pollux and a point or so north of east try if you can see what looks like a patch of light cloud. Put your glass on it and you will see a beautiful cluster of small stars. It is called Præsepe, the Manger, the Crib, the Beehive.

A little farther north the Sickle is rising. It is in the head of the Lion. A couple of hours later, when he has pulled his hind quarters above the horizon, you will see Saturn.

A. CAMERON.

Yarmouth, N. S.

Suggestions for the Public School Course.

We have received the following letter from one who has had the most successful experience, both as a teacher and as an inspector, in Nova Scotia. It was probably not meant for publication; but the suggestions are so definite and so worthy of consideration, that we feel it should be placed before our readers. Whatever effect it may have will certainly be in the direction of improvement:

"I see by the EDUCATIONAL REVIEW that the revised course of study will soon be ready. Is it too late to make a suggestion? I think a systematic course of mental arithmetic should have a place in the next course. McLellan's Mental Arithmetic, Part I., distributed among 7 or 8 grades would serve a most desirable purpose both from a utilitarian and intellectual standpoint. How would this division do? Grade II. from page 9 to p. 23. Grade III. from p. 23 to p. 38. Also practice in Reduction tables of grade at pages 89, 90 and 91. Grade IV. from p. 38 to p. 47. Also from p. 51 to p. 54. Reduction tables of grade at pp. 92, 93, 94 and 95. Grade V. from p. 47 to p. 51. Also from p. 85 to p. 97. Grade VI. from p. 55 to p. 74. Grade VII. from p. 74 to p. 86. Also p. 97 to p. 105. Grade VIII. from p. 105 to the end of the book. I believe if mental arithmetic were made authoritative in the way I have indicated, the result would be a great improvement in the study of arithmetic generally. When left to teachers, if mental arithmetic is taught at all, too often the questions are feeble, and are repeated without much variation. What is going to be recommended in the way of geography? It is terrible to think that every child in Nova Scotia that has run the blockade of scarlet fever, measles, etc., must at last be confronted with that tremendous book called "Calkin's Geography." To see little children poring over that book a long winter evening is a heart-rending sight. What we want is a book of maps, from which everything should be learned with the help of some questions in connection with each map in order to give the child some idea of what he should learn from it. This is my opinion, and I know what I am talking about. I wish you would take an interest in these two matters, notably the arithmetic. McLellan's, Part II., might be used in the high school course."

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

TENTH PAPER.

In former papers we have looked upon Doh as the ruling tone, and the Doh chord as the most important chord, supported on the one side by the similar chord Soh, and on the other side by the similar chord Fah. All these three are major chords, *i. e.*, the lower third in each is a major third, or two whole tones.

Prominence may be given to almost any other note of the scale, by frequent repetition, by being put in the strong pulse of the measure, and at the beginning and end of the composition in cadences, and by the way in which it is approached. The music would then take character from this prominent tone and be bold, or bright and cheerful, or solemn almost to sadness, or rousing, or sad even to weeping. By exercises of this nature the teacher can more fully and strongly develop the mental effect of the different notes of the scale in his modulator exercises.

The Ray, or more correctly the Rah Mode, was formerly much in use, but because, according to the modern rules, the harmony in this minor mode the chords are somewhat harsh, this mode has fallen nearly out of use. The only two modes much used now are the Doh Mode and the Lah Mode. When the music passes in one piece from the one mode to the other in Tonic Sol-Fa Notation, we call this modulation, and the term Transition is applied to the change from one key to another. In the Lah Mode it will be felt that some of the notes of the scale change their character. The *d* loses some of its restfulness and firmness. The *l* becomes less expectant, more restful, though even sadder than before. The note *m*, its fifth above, seems to increase this mournful effect of *l*, and itself to become grander and more important as the fifth of the new tonic lah. When we look at the L chord in the scale we see that it and its more closely related chords M and R have each a minor third, *i. e.*, three semi-tones at the bottom; and a major third, or two whole tones above. These two chords have the same relation to Lah and its chord as the chords S and F have to Doh. The tone lah obtains an additional importance when it has a leading tone given it like *Te* leading up to Doh. This leading tone is the sharp of S, and called *Se*. We now find an awkward interval between *f* and *se*. This is sometimes removed by sharpening *fah*. This new note, except in certain phrases, is not named *fe* but *ba*, and is pronounced *bay*. In looking to the modulator it will be seen that the intervals *m ba se l* correspond with those of *sl t d¹* in the scale two removes to the right, and this may help to the

singing correctly of these tones. The teacher cannot so easily teach the minor mode as on the modulator. By using it largely, and gradually bringing in these changes, the pupils will experience very little difficulty. It will be noticed that even when these new tones are not introduced that the notes *f*, and more particularly *s*, disappear from the minor phrases, and where they are introduced they are more difficult to sing. In preparing for the minor mode the teacher should give prominence to the notes of the L chord into his modulator exercises. Next let him begin with major mode phrases, and then let him, without giving any notice of the fact, pass into the Lah Mode and ask the class if they observed any change in the character of the music. He may ask which notes helped most to give this effect. The answer will be *l* and *m*, and the phrases *l t d¹*, *d¹ t l*, *m l* and *l m*.

When these minor exercises become quite familiar, the new tones *se*, and after *ba*, may be gradually introduced in easy phrases, and they will give little difficulty. The teacher may point on the modulator exercises like the following:

No. 1.
 { *d m f s s l s f m m l t d¹ t l m r d t¹ l₁.*
 No. 2.
 { *s m f s d¹ t l s m l d¹ t l m r d r m l.*
 No. 3.
 { *m₁ l₁ t₁ d r m :—:— d r m f s m :—:— t₁ d r m f*
 { *s t₁ d f m :—:— r :—:— d :—:— d m m m m r :—:—*
 { *d :—:— d m m m m r :—:— dt lt d r m i se :—:—*
 M₁ l₁ t₁ d r m r m f m r d :—:— t₁ :—:— l₁ :—:—
 (HEB. MEL-LEONI.)
 JAMES ANDERSON.

For the REVIEW.]

Temperance.

I will take advantage of the subscriber's privilege, and claim a place in your valuable paper in which to express a few opinions on the importance of teaching temperance in our public schools. I have always given this subject a good deal of time and attention in all the schools in which I have taught, numbering five.

In each of my schools I organized a temperance society, and succeeded in getting all my boys and girls to sign a little temperance pledge. I have had the satisfaction of knowing since that the signing of that little school temperance pledge has kept my boys in many cases from yielding to the temptation of taking the first glass of liquor, and thus they are growing up to be temperate young men.

At our Kings County, N. B., teachers' institute, the opinion was expressed that we should not teach temperance in schools other than from a scientific standpoint. I cannot agree with that statement at all, and I do hope that few, if any, of the teachers of New Brunswick do. I have always been able to make deeper and more lasting impressions upon my scholars by teaching it from a moral standpoint. I think that our instructions should be based upon science, but that we should endeavor in every possible way to teach our boys that they cannot afford to use intoxicants at all, and to lead them to hate intemperance.

I always have and always will teach my boys that the faculties which God gave them, and which should be developed and educated so as to form the character of the noble man, were never intended to be ruined by the use of intoxicants. Also that intemperance is the enemy to wealth, honor, social and moral happiness; and that the man who becomes a drunkard must forfeit all of these, and get in return the drunkard's reward in life and in death. I cannot see how any honest teacher can help teaching temperance in their school from a moral standpoint. I would make very little effort to reform a drunkard, but would make any sacrifice to help to keep our boys temperate and pure from the pollution of intemperance; and would, therefore, ask all fellow-teachers to help save our boys. I consider that in the present age every Christian man and woman should be a worker in the temperance cause, and that there is not and could not be any better field for labor than the school room. The boys are at the age when they are most easily influenced either for good or bad, and that more lasting work can be done for the temperance cause then than at any other time. I feel sure that all the mothers, wives, sisters and daughters of drunkards, either moderate or inveterate, will agree with me in the opinions I have tried to express.

Again, I feel sure that when I have all of these to agree with me I have a large majority of the female sex.

I hope you will pardon me for making my remarks so lengthy, as I am very much interested in temperance, and could not resist the inclination to have a conversation with the other teachers through the *EDUCATIONAL REVIEW*.

S. J. L. N. B.

JENNIE H. HANSON.

To separate the leaves of charred books, a French official has devised the following means: Cut off the back of the charred book so as to render the leaves absolutely independent from one another, then soak them and dry them rapidly by a current of hot air. The leaves will then separate, but must, of course, be handled with extreme care.

Book Knowledge

Book Knowledge Indispensable.

Apropos of Dr. Hall's very interesting remarks on the "German Schools": Though the plan of educating the child through the senses, and of allowing him the free exercise of those senses in the most natural way, viz., in the open air, must commend itself to every teacher, yet, I think, he will require no inconsiderable amount of book-learning to enable him to "write down his observations."

He may dispense with the third "R," but he must have an elementary knowledge of grammar in order that he may express his ideas with some degree of accuracy. To this end he must have spent at least *three years* in our "bookish schools," and then he will be an exceptionally bright pupil if he finds his task an easy one.

The foregoing is especially applicable to a district like this, where English is very imperfectly spoken, and the children have virtually to be taught a new language.

A LADY TEACHER.

S. J. L. N. B.

Book Knowledge

Teachers' Work.

I think country schools are the most difficult in which to introduce the whole course of instruction. This can probably be traced to a twofold reason.

In many districts the trustees are chosen from the most wealthy men, in order to be economical in point of teachers' salaries, and who do not take an interest in the school, as in many cases they have no children. In other districts the trustees are those who know nothing about the minor subjects to be taught in the schools, and, therefore, think they should be conducted as in their school-days.

In these cases the teacher finds it difficult work to run the school with the course laid down.

The teacher must in some way convince parents that it is for the welfare of their children to follow the studies laid down in the school law. How is this to be done? Could there not be a day set, say once a month, on which the parents are invited to drop into the school-room to see the different work their children are doing?

I presume there is no district but that there is some parent or other person who would respond to the invitation. Let the teacher have some special work prepared, and while exhibiting it, explain how important a place it takes in the scholars' education, letting fall at the same time a few hints how beneficial it would be to the parent to call and see for themselves what is going on in the school. There are many persons who

would be glad to say to a neighbor that they had visited the school, and remark how well they had been received by the teacher, and what pains had been taken to explain the workings of the school. When parents become acquainted, and understand why the objectionable subjects are taught, the prejudice soon wears away, and the teacher can with less difficulty introduce these subjects among the pupils, who will soon take an interest in the exercises when they have their parents' approval. Some may think their work is thus increased, but the live, earnest teacher will work only for the benefit of the school.

A. B.

Queens County, N. B.

For the Review

A New Snake Find.

To the student of nature the distribution of wild animals is always a matter of interest, even though the forms observed are those of a race so generally despised as that of serpents. It is for this reason that I venture to say a few words with regard to the recent discovery here of a snake which, so far as I have been able to learn, is new to our fauna.

The stranger was observed by me about a fortnight or three weeks ago as I was descending from my daily duties on "College hill," and was at the time making rapid progress across the carriage-way leading to the University. After some little coaxing he was induced, not knowing the fate which awaited him, to enter a small bottle placed conveniently before him; and notwithstanding the strong temperance sentiment in Fredericton, was soon treated to a draught of spirits of wine. As with all immoderate drinkers he eventually succumbed to its influence, and, upon being taken out for post mortem examination and identification, was, as I supposed, found to bear the appellation of the "Little Red Snake," *Calamaria amoena*, Holbrook.

In length it was about six inches and remarkable for the shortness and abruptness of the tail; while as to color, the lower surface or belly was a rich copper red, the back being also reddish, but darker, and with a shade of brown. The history of his relatives being sought (in the Natural History of New York), it was found that the range of the species is from New Hampshire to New Jersey. How, then, did our friend get here? The place in which he was found was only a few yards from the track of the Fredericton Railway. Can it be that he is a *stowaway*, who had come across the line by rail, dodging the keen-eyed officials at Vanceboro? It may help to throw light upon the question to know whether any specimens of a like kind have ever been observed here, and it is with a view to obtain information upon this

point that I now address your numerous readers. Has any one of them ever met this "Red-skin" within the limits of New Brunswick or Nova Scotia?

L. W. BAILEY.

University of New Brunswick, Fredericton.

Later advices from the Museum of Comparative Zoology at Cambridge, indicate that my little captive, sent on for identification, is *not*, as was at first supposed, *Calamaria amoena*, but a closely resembling form known as *Storeria occipito-maculata*, the name having reference probably to two little pale spots behind the head, by which, together with some other characters, the species is distinguished.

Though the discovery here of this snake is less important than would have been that of *Calamaria amoena*, it is still one of some interest, as the first named species has not hitherto been reported north of Portland, Me. It is, however, probably a true British subject and not a mere tramp, as at first supposed. Its occurrence here was to be expected while that of *Calamaria* was not.

Kindergarten Methods in Primary Schools.

THIRD PAPER.

In the third lesson, on the cube of the second gift, we emphasize the fact that the cube has *six faces*. A cube is given to each, and questions are asked in review of what they already know, as, "Is it round," etc. Ask of one pupil, Has your cube one face? This will occupy the attention of all, and a ball may be brought and compared. What kind of a face has your cube? How many faces has it? Count the faces by opposites, with all pointing as you count; top, 1; bottom, 2; back, 3; front, 4; right, 5; left, 6. Ask them to think of something with six faces or sides. One child thinks of a box, and one is brought from the desk, and she holds it while we all count. It has six faces. Is it a cube because it has six faces? There is a difference of opinion here, and perhaps we better leave it until another day when we know about *square* faces. Simply tell them to think about it until another day. One more observing remarks that the faces of the box are not the same size, and here we turn the attention to what our cubes can do. Can yours roll? Why not? What can it do? It can stand. Is there anything else it can do? It will slide. The ball can roll, but the cube cannot roll. They are opposites. We finish this lesson by counting cubes in sixes as they are put away. Most of the little ones can count five fingers on one hand and one more is easily grasped.

Next day the *sharp corners* of the cube are taken

up. Recall the round and flat faces of previous lesson, and touch faces of objects in room, describing them. Has the cube any other part besides faces? Yes. Take it in one hand and grasp it firmly. It has parts that stick into our hand. What do you call them? They are sharp places or corners. Count the corners of the top face and also of the bottom face. How many corners has each? Four. Two fours are how many? Have individual and simultaneous counting of corners until all know there are eight. Find corners of objects in the room? Compare outside and inside corners. Some corners are dull and some are sharp. Has the sphere any corners? No. Perhaps some one will say: "It has only one face and so there is no place for a corner, no face to meet that one."

Another day we dwell on the *round and straight edges* of objects, and we distribute to each a sphere, cube, and ring. (In the Kindergarten the ninth gift consists of steel rings of different sizes.) We begin our lesson always by reviewing what has already been taught, and to-day we want to find out something more about our cube. Let us look closely at this cube and see if there are any other parts besides faces and corners. Yes, there are. What do you call them? Perhaps some will know and others may not. One little girl said: "If you call the sides faces, then there must be arms;" and once another child called the corners "elbows;" so, we see they are not all familiar with the word *edges*. Let us look for a part, like those we are speaking of, somewhere else. Has the table any? Yes; look around the room and find some others. Several are found, and one child is directed to put her hand on one face, and another puts her hand on another face, and they move their hands slowly towards each other till they meet. Each pupil sees that the part we are talking about is where the two faces meet. If no one knows the word *edge* we tell them, and give the name. Then we find edges which go in the same direction as those of the cube from top to bottom, or from left to right. Compare the edges of your cube with the edges of the block (cylinder) which I am holding. Why, its edges go round! Find round edges in the room? Do the edges of cube and desk go round? No. They go from left to right and from back to front. Take a piece of cord, put it through the centre of a cube and hold the ends so that the cord will be straight, then hold the cord so it will be curved. The opposites, curved and straight, are seen at once. We then find straight and round edges of objects in the room, and at the close draw pictures of straight and round edges on the blackboard.

(To be continued.)

For the Review

"The Missing Link."

THE MISSING LINK, OR THE CONTINUATION OF THE THREE-FOLD DEVELOPMENT OF THE CHILD FROM KINDERGARTEN TO THE MANUAL-LABOR SCHOOL. Emma Marwedel. D. C. Heath & Co., Boston, New York, and Chicago, with two plates illustrating directions given in text. Manual training in the educational centres of Europe and America is not only holding its own in the Kindergarten proper, and progressing in special schools for industrial training, but it is also gaining a recognized place in many collegiate institutions hitherto solely devoted to intellectual pursuits.

As Kindergarten departments come into operation as a necessary part of the public school system, they will, from their very nature, and the success attending their methods, force upon educators the necessity of carrying on in the succeeding grades the manual training which is so marked a feature in Froebel's system. The law of development, which requires uninterrupted continuity, imperatively demands this. But in order to achieve success great care will be required as to the choice of materials, tools and the course of instruction. Both tools and materials must be within easy reach and inexpensive; the former must lend themselves freely to the child's slender strength. The course of instruction must also be such as to stimulate the free inventiveness of the child; to produce a love of work for its own sake, and cultivate the ability to express in outward forms, created by his own clever fingers, the thoughts and feelings of his heart and mind. All mere imitation must be ruled out, and originality should be encouraged, even although it should express itself in a crude, or even in an uncouth manner.

Miss Marwedel, in the book before us, has indicated the path, and also the means of following it, to those who would carry on in the intermediate departments the sense-education and training in manual dexterity so well begun in the Kindergarten, and in those primary schools where, happily, the teacher is in sympathy with Froebel's philosophy. Miss Marwedel's German thoroughness and great practical experience in American Kindergartens, together with the respectful recognition of her services to the cause of child-culture by distinguished educationists, who cordially endorse her exposition and application of Froebel's ideas, should ensure a favorable reception for this book from parents and teachers. Miss Marwedel's "circular drawing," which has been before the public for sufficient time to test its merits, has been adopted by the authorities in Chicago and Philadelphia, and forms an admirable preparation

and accompaniment to this little work. Our object in bringing this "Missing Link" to the notice of teachers and parents is with the hope of inducing them to look carefully into a subject which has not yet engaged their serious attention. To the readers of the EDUCATIONAL REVIEW we commend the study of Dr. Birch-Hirschfelder's lecture "on the value of instruction in manual dexterity as regards bodily development and hygiene," of which Miss Marwedel gives an excellent abstract. Every sentence is weighty. The brief account of manual labor reform in Germany is valuable because the writer speaks from personal experience and inspection of the movement in several great centres.

In closing let us remark that the labor reformers are divided into two distinct classes, those who, as in Russia, advocate reform as rendering the laborer more intelligent, and, therefore, a better producer. This wing has a following in England and other parts of Europe, but while many of the defenders of this theory are very able, and, as far as they go, are doing much good, they miss the point of genuine education—the harmonious development of the individual in every part of his being. The other class, while fully alive to the material advantages of industrial training, look upon it as the means to an end. The culture of the body, the sharpening of the senses, the cerebration of the fingers, the strengthening and refining of the intellectual powers, the stirring of the imagination and aesthetic faculty, whereby the common, every-day life of the poorest may glow in the beauty that blind eyes never see, nor dull hearts feel, but which sinks deeply and sweetly into the soul, rendered sensitive by a wise training. Such are the aims of the progressive labor reformers of our day. Are they not worthy aims? The upbuilding of character; the development of manhood. C.

Halifax, N. S.

Patriotism—How Can it be Developed in Our Common Schools?

By INSPECTOR BRYDGES, A. M.

Read before the Provincial Teachers' Institute, Moncton, June, 1890.

If anyone were to consult our Manual of School Law it would be found, under a regulation embodying the duties of teachers, that it is the duty of the teacher to give instruction as occasion may require to the school concerning loyalty and love of country. The subject which we have under discussion—and just here I might mention that it was not chosen by me but was placed in my hands by the executive committee of the Institute—seems to imply that the sentiment does not receive a fair attention at the hands of the teacher, and it is not at present being developed in the common school. Now no one for an instant would question the patriotic feelings which exist in the minds of the 1,600 or more teachers of this province; in fact I think we

take pride in considering ourselves as patriotic as any profession in our country, and if a proper knowledge of the history and of the great resources of this land is necessary then surely the teacher stands first in cherishing this sentiment of love of country. And I believe that teachers, or at least the large majority of them, are doing good work in stimulating patriotic feelings in the minds of the pupils under their care.

But, as I take it, the object of these papers read before this Institute is to renew within our minds our duties, to quicken us to a lively sense of them, and also to promote healthy discussion. Nobody expects the teachers to place this subject in the time-table, and devote a portion of each week in reading essays to the pupils upon love of country; or to take the word patriotism as the key-note of a lesson to be given on certain occasions. I, for my part, would be the last one to do any thing to increase the already lengthened chain of obligations that press almost too heavily upon the teachers of our province.

It is in connection with, and by means of subjects already in our curriculum—such as reading, composition, and emphatically history and geography,—that we are to accomplish the object set forth in the title of this paper, and if I am able to point out or show how, by treating these or other branches of school work as a medium by which the teacher may introduce this subject to the careful attention of the pupil, I shall have accomplished some part of my object. Now it might be asked here how soon this subject could be introduced with any degree of success, *i. e.*, in what standard of our course. Whatever faculty of the mind leads a child to love its own home and parents and prefer their own to all others, that very same will teach the young pupil to love his own country and prefer it to all others. Place a boy from the United States in one of our schools, and how soon the others will call him a Yankee. Just as soon as a pupil begins to learn concerning his country, he should know that it is *his own* in distinction with others.

A great deal has been done lately to stimulate pupils in this direction in the observance of Arbor Day. Trees have been set out in honor of our Queen, the Governor General and the statesmen of Canada, thus calling their attention to their country. More yet remains to be done. As the number of trees set out lately has been many less than formerly, the decoration of the interior of school rooms is coming in order; and if in connection with these decorations such mottoes as "Canada, our native land," and "For God and home and native land" were placed upon the walls of the school room, the effect would undoubtedly be good.

For the pupils to be able to fully appreciate the degree of civil and religious liberty which we enjoy in our country, and to have developed within their minds a true patriotic spirit, it is absolutely necessary to possess a good general knowledge of British and Canadian history. The people of Canada are largely, directly or indirectly, of English, Scotch, or Irish descent. It is right then that the children of these people who are united in our country by common interests, by pursuing the same calling in life, and by a general and growing desire for the development of the resources of our land, as *closely* as the crosses on the flag

that floats above our public buildings are knit together, should receive accurate instruction in the history of the mother country. It is through this history that they are to learn of the struggles of their ancestors for freedom, beginning with Magna Charta in King John's reign, down through the Tudor and Stuart periods, and only ending in the present century. And here it would be proper for the teacher to bring to the pupil's notice the existing state of affairs in other countries, the despotism that continues in force in Russia, the military tyranny in Germany and other nations. It is through a knowledge of the tyranny and despotism that rule with the iron rod in other countries that we properly appreciate our own freedom. British history must always receive its proper attention in our schools.

When we consider that Canadian history was first introduced into our public schools as late as 1874, and that previous to that date nothing was taught concerning our native country, surely everyone is ready to concede that our schools have made great progress in this study. Where formerly Wolfe and Montcalm and the Landing of the Loyalists were fast becoming traditions, and the successful struggle for responsible government might soon have been less, now every pupil that passes through our common schools has some idea of the early settling of the country, of the wars between French and English, the contest of 1812-14, the struggle for responsible government and the Act of Confederation. Here the history of the provinces unite into that of the Dominion. The statesmen through whose influence and by whose efforts this Dominion was formed, when they met together in Ottawa in December, 1869, stood upon the threshold of a *new era in the history* of half the North American continent. Only twenty-three years have passed by, but during that time great strides have been made in the development of Canada. Railroads have been projected into countries which a few years ago were considered but a howling wilderness, and the resources of the country, which I will have occasion to speak of hereafter, as well as the efforts put forth for their development, are only beginning to be appreciated.

Along with the subject of history in our curriculum is placed that of civil government. Not enough attention is devoted to this in our schools; it is like entering the thin edge of our subject, and yet some of our schools are but indifferently informed in this particular.

As the pupil in ungraded schools learns the parishes into which his native county is divided, he might be told how each parish elect representatives to the county council, and later on in the course they should know how often they are elected, who have votes in the election, what their presiding officers are called, and what are the duties they have to discharge. — that they pass acts referring only to the county which they represent — they appoint road-masters, constables and other officers, and make provisions for the support of the poor in each parish, etc. In the same manner the pupils of graded school in our incorporated towns and cities should be taught that the city or town is divided up into wards; that from the city at large a presiding officer called the mayor is elected, and from each ward aldermen. They should know how often they meet, and some of their duties, such as making provision for taxa-

tion, providing means for extinguishing fires, and some of their powers with regard to appointing city officials.

It is a mistake to put off the teaching of the chapter, in Canadian history, upon the constitution of the Confederation till the completion of the book. This in my opinion should be taught as the pupil begins this study, along with the most recent events. I think that it is of Daniel Webster the story is told that he invested the first fifty cents he received as a boy in a handkerchief with the constitution of the United States printed upon it, and immediately committed it to memory. This may or may not have had something to do with the fact that he afterwards became the great defender and preserver of that same constitution. It would be well now-a-days, too, if more of our boys knew by heart the history of the constitution of our Confederation, and that it is the British constitution intact. Every teacher knows and appreciates how difficult it is to get children to express their ideas in proper language. It is in my opinion, the greatest difficulty that presents itself to teachers, and after the most painstaking efforts on their part, the success met with may be very small. Canadian history is one of the best subjects to improve pupils in this respect. It should be taught as much as possible orally, and each pupil should be provided with a note-book. For, I am afraid, that if it were left to the text book to develop a love of country and kindle the sacred fires of patriotism within the youthful breast, they would smoulder long ere they burst into a glorious flame. I think we have something better to look forward to in this connection. It is to be hoped that, if only for this very purpose of promoting a love of country, and also a unanimity of spirit among the rising generation of this great land, there may be but one history used throughout the schools of Canada — one in which the history of each province shall not be written separately, but in which the contemporaneous events of each may be carried on together to the time of confederation, and from that date brought down to the present time in one general history. Until something like this is done, there still remains more to be desired before we may expect the greatest development of patriotism from the study of history in our common schools.

I have mentioned before, reading and composition as a means of introducing this sentiment to our pupils. It is a matter of regret that we have not yet reading books that have some reference to Canada. Our reading books are admirable in their way, but fail in this particular. Our country is young and we have still much to look forward to. The literature of a nation has always been a means of promoting love of country. I suppose if any one here present were asked to give a quotation from Scott, mostly all would commence, "Breathes there a man, with soul so dead, who never to himself hath said — this is my own, my native land." To illustrate the influence which this poem alone was judged to have upon the youthful mind, it is said Archbishop Whately when selecting a list of poems to be placed in the schools of Ireland, a number of years ago, struck this from the number, as he thought that in the unsettled condition of the country it might help to stir up rebellion. Our pupils should be given composition exercises upon portions of history of our country. Things

learned by writing about them are not soon forgotten, and too much praise cannot be given a newspaper like the *Montreal Witness*, which has done much already to preserve local tradition, and to set the youthful mind thinking about the early history of the country and pioneer life, by giving prizes throughout the length and breadth of this Dominion to the pupils in the different counties. I believe firmly in the teaching of singing in our schools. Its influence is good, and the public themselves thoroughly enjoy it. For example, I have on one or two occasions been in schools where the teacher, when about to dismiss school, was interrupted by some little girl holding up her hand and saying, "Please, ma'am, can't we sing?" The teacher had evidently forgotten it; but the pupils were not to be cheated out of their song. The influence of singing in our schools good patriotic songs cannot be overestimated. In great crises in the affairs of nations, national enthusiasm and patriotic fervor have always broken out in songs. Take for example those that date their origin from the Southern rebellion in the States, the Jacobite songs in Scotland, and the Marseillaise in France. The power which this last song wielded over the soldiers of France during the latter part of the great Revolution is illustrated by a story told of a French general — Hocke I think it was — who, when hard pressed upon the frontier by German troops, sent to Paris for some regiments and a thousand copies of the Marseillaise. We in Canada have not yet a national song. That is one of the things we have to look forward to. But there are numbers of patriotic airs in our prescribed song books which should be taught our pupils.

(Concluded next month.)

Monument to Columbus.

The *Scientific American* of October 28th has an illustration and description of a design for a monument to Christopher Columbus, which may become one the features of interest at the world's fair at Chicago. The designer, M. de Palacio, a Spaniard, has conceived a most perfect form, the sphere, whose diameter is to be 1000 feet, and which is to be constructed of iron.

The following is a description of the magnificent design:

The colossal sphere is mounted on a base which is 262 feet high, and is crowned at its North Pole by the caravel which carried Columbus to the New World. The monument is brilliant with the colors of the continents, oceans and islands of the terrestrial sphere.

The sphere will be encircled at the equator by a platform 3,280 feet, or more than half a mile long. An exterior spiral running around the northern hemisphere will form a track nearly two miles long, leading from the equator to the North Pole. At night the sphere will be illuminated by the lines of light which will form the outlines of the continents and islands, thus casting over the city torrents of refulgent brilliancy. The great pyramids of Egypt, the Sphinx, and the Colossus could lie in the hollow interior like jewels in their case. So much for the exterior aspect.

An interior track runs around the southern hemisphere from the South Pole to the Equator, where it joins the exterior spiral. The total length of the spiral is nearly four miles, over which the sightseer can travel on a tramway.

In the base and under the majestic central rotunda will be placed a gigantic statue of the great discoverer surrounded by the navigators and missionaries who rendered his discovery fruitful. In the semicircle around this Olympus of heroes, inclosing the amphitheatre, will be allegorical statues representing all the Spanish nations.

In the remaining spaces of the compartments in the base a large Columbus library will be distributed; auditorium for the cultivation of the natural sciences, museums of Zoology, mineralogy, and botany of America, rooms for the Spanish Geographical Society, a great naval museum in the interior central compartment, a meteorological observatory in the hull of the caravel. All this is independent of the promenades, cafes, and restaurants for the public.

In the interior the celestial sphere can be exactly reproduced. It can also be used for magnificent panoramas, because the spherical form is the best for obtaining illusions of perspective. There will be a place for public entertainments.

Mr. Palacio secures the stability of this immense mass by means of a simple method similar to that used for equestrian statues, so that the sphere will be able to resist winds of greater force than a cyclone.

From a business point of view Mr. Palacio makes the following calculation: One hundred thousand spectators paying an entrance fee of \$1 will bring \$100,000. This will replace the capital in 62 days, without counting the profits of the cafes, entertainments, etc. The estimated total cost is \$6,000,000.

UNTIL quite recently grammar had always been regarded as a very important subject in the public school curriculum of Ontario, but for some time the opinion has been gaining ground that it has taken the place that practical language training should occupy. At the recent meeting of the Provincial Teachers' Association, Principal R. K. Row, of Kingston model school, crystallized this thought in a resolution, "that *technical grammar* should be removed from the public school programme except so far as it may be taught incidently in a thorough course of practical language training." He showed that the profitable study of grammar requires the best powers of trained minds, and therefore the part of the subject studied in public schools is very imperfectly understood. He also showed that those who never go farther than the public schools, comprise ninety per cent. of the whole school attendance, and that these do not make any use of the smattering of grammar acquired; and that owing to the time wasted on grammar, the training in the use of language has been all but generally neglected. A lively discussion followed the address, but the vote was nearly unanimous for the resolution. Mr. Row and Mr. Wm. Houston, M. A., of Toronto, were appointed to prepare a syllabus of language lessons for the public schools of the Province.

Glaciers.

In high valleys, among the mountains whose tops are covered with perpetual snow, are often found seas of ice, called "glaciers." They are formed thus: Snows that fall upon lofty mountains melts very little even in summer. So in valleys high up among the mountains it gathers to a great depth, and, from the weight of the snow lying above, the lower layers become icy, as a snowball does when squeezed. The upper crust melts a little during the heat of the day, and the water sinks down through the snow, and then freezes at night. From this melting and freezing the mass of snow is soon changed into a sea of ice.

Remember that when water freezes it expands. If we fill a bottle with water and let it freeze over night, in the morning we find that the bottle is cracked by the swelling of the ice. So it is with the water that form glaciers. When it freezes it stretches, and pushes its way down in whatever direction the valleys slope.

Glaciers of to-day are much smaller than the ice-seas of long ago, but still, in studying them, we learn to understand the old glaciers.

In traveling down valleys those ancient glaciers left traces of their journey. Over all the places where the ice-seas passed, the rocks are rounded and highly polished. A field of these rounded rocks, when seen from a distance, looks like a field filled with sheep crouching on the ground, and Swiss geologists have called them *roches moutonnées*—"sheep-like rocks." In a valley along the summit of the Rocky Mountains, near the "Mountain of the Holy Cross," there is a beautiful display of these polished, rounded rocks.

As the glaciers moved down the valleys, great rocks, frozen fast in the ice on the sides and at the bottom, scratched and marked other rocks as they passed by and over them. Sometimes these scorings are very broad and deep, for the immense rocks the glaciers carried were like strong, powerful tools in the grasp of a mighty engine; sometimes the lines are as fine as those of a fine engraving. They usually run all one way, and by looking at the direction in which the lines run, one can tell the direction in which the glacier moved. In the sandstone west of New Haven, Connecticut, the deep, broad scorings can be plainly seen, running toward the southeast. The height at which these scatches occur tells us something of the depth of the ice.

Markings in the White Mountains indicate that the ice was more than a mile deep over the region now known as northern New England.—*Teresa C. Crofton, in November St. Nicholas.*

A Practical Geometry Lesson.

One chilly evening the sitting-room in which my pupils and I sat was warmed by a grate-fire. Shaking out some small live coals, I bade the boys observe which of them turned black soonest. They were quick to see that the smallest did, but they were unable to tell why. They were reminded of the rule they had committed to paper, but to no purpose, until I broke a large glowing coal into a score of fragments which became black almost at once. Then one of them cried, "Why, smashing that coal gave it more surface?" This young fellow was studying the elements of astronomy at school, so I had him give us some account of how the planets differ from one another in size, how the moon compares with the earth in mass, and how vastly larger than any of its worlds is the sun. Explaining to him the theory of the solar system's fiery origin, I shall not soon forget his keen delight—in which the others presently shared—when it burst upon him that because the moon is much smaller than the earth it must be much colder; that, indeed, it is like a small cinder compared with a large one. It was easy to advance from this to understanding why Jupiter, with eleven times the diameter of the earth, still glows faintly in the sky; and then to note that the sun pours out its wealth of heat and light because the immensity of its bulk has, comparatively speaking, so little surface to radiate from.—*From My Class in Geometry, by Geo. Fos, in The Popular Science Monthly for November.*

Tea and Coffee.

Who grows the tea?

China, 290 million lbs. per annum; India, 52 millions; Japan, 35 millions; Paraguay, 10 millions and Java 7 millions.

Who drinks the tea?

Great Britain, 167 million lbs. per annum; other countries, 114 millions; United States, 72 millions, Russia, 37 millions; Australia, 14 millions.

Who grows the coffee?

Brazil, 333,000 tons; Java, 70,000 tons; Ceylon, 29,000 tons; West Indies, 28,000 tons; Africa, 36,000 tons; Manilla, etc., 35,000.

Who drinks the coffee?

United States, 165,000 tons; Germany, 110,000; France, 55,000; Belgium and Holland, 50,000; Austria, 40; British Colonies, 38,000; Brazil, 23,000; Russia, 20,000; Norway and Sweden, 20,000; Great Britain, 15,000; Italy, 14,000.

School and College.

V. E. Coffin, B. A., (Dal.), has been appointed tutor in English in Cornell University.

A. S. MacKenzie, B. A., (Dal.), has won a fellowship in Johns Hopkins University.

Frederick MacLeod, B. A., (Dal.), has been awarded a \$200 scholarship at Harvard.

New Glasgow High School opens the winter term with an attendance of 120 students; Pictou Academy, 194; Halifax Academy, 237.

No reports from other Academies at date.

Truro Academy boasts of adding the *Encyclopædia Britannica* to its library. Very good.

The Halifax Academy, during the last few years, has formed a library of over 500 volumes of the latest standard works in literature, English, French and German, and in popular science. The *Encyclopædia Britannica* and other cyclopedias are among them. This library is used to a very great extent by students, the duties of the librarian being quite onerous.

Pictou Academy is adding modern books to an interesting old library, which contains some specially curious and valuable works in its collection.

The English and classical authors for the preliminary law examination in Nova Scotia next February, are announced to be the same as in September, 1890.

County Academy Entrance Examinations, 1890.**ARITHMETIC AND ALGEBRA.**

1. Add together, seventy-eight millions; eight thousand and ten; sixty-five thousand and forty; eight hundred thousand and fifty five; four hundred thousand three hundred and one. State in words by how much the sum falls short of two hundred millions.

2. I have 10 bbls. of potatoes, each bbl. weighing 180 lbs.; there are three potatoes in each lb.; how many square yards of land can I plant if I plant 20 potatoes in each sq. yd.?

3. Give the weight of a bushel of the following: Wheat, Oats, Potatoes, Barley, Beans, Corn, Buckwheat. How many steps does a man whose stride is 32 inches take, in walking 3 miles?

4. Define numerator, denominator, common fraction, decimal fraction, and simplify:

$$3\frac{1}{11} \div 1\frac{8}{9} \times 5\frac{1}{2} + \frac{3\frac{1}{2} - 1\frac{2}{3}}{3\frac{1}{2} + 1\frac{2}{3}}$$

5. State the rule (1) for reducing a vulgar fraction to a decimal fraction; (2) a decimal to a vulgar fraction. Express in lbs. .006 ton + .03 cwt. + .09 of 3 qrs

6. The floor of a room measures 14 by 12½ ft and is partly covered by carpet measuring 11½ by 9¾ ft.; find the cost of covering the remainder with oil cloth at 90c. per sq. yd.

7. Find the simple interest on \$750 from May 5th, 1887, to October 31st, 1890.

8. If a bankrupt's assets are worth \$7,000, and his debts

are \$16,000, how much does he owe a creditor who receives \$500?

9. Multiply the sum of $3x-4y$ and $3y-x$ by the sum of $2x-2y$ and $3y-3x$.

10. From a rod a inches long I cut off $b-c$ inches: how many inches are left?

11. The product of two algebraical expressions is $x^6 + x^5y + x^4y^2 - x^3y^3 + y^6$ and one of them is $x^2 + xy + y^2$; what is the other?

GRAMMAR

1. Give the general rule for the formation of the plural of nouns.

Give the wanting singular or plural of the following; underline those which do not follow the general rule: Cat, Match, Wives, Children, Women, Roof, Taxes, Penny, Dies, Turcoman.

2. What is a pronoun? Give the declension of the Personal Pronouns.

3. Define Voice, Mood, Tense, and write out a scheme of the tenses of the Indicative Mood, Active Voice, using the verb *take*.

4. Distinguish between the *weak* and the *strong* conjugation, and give the principal parts of the following verbs, classifying them as weak or strong: *Think, strive, pay, cut, eat, shoot, know, teach, feel*.

5. What may the "Extension of the Predicate" consist of?

6. Correct, where necessary, the following sentences: I knew it to be he. The boiler bursted yesterday. Three months' salary were paid Henry and not you is to blame. Who do you think me to be? Nothing but picture books please him.

7. Parse and analyze the following:

Underneath day's azure eyes
Ocean's nursling Venice lies.

QUESTION DEPARTMENT.

A. P. M.—My school comprises grades 5, 6, 7 and 8. Besides these there is always a class who have completed the above work, and take selected studies in high school course. I wish to make the examination of pupils passing into the latter class correspond as nearly as is possible to the County Academy entrance examination, having the papers carefully preserved, subject to re-examination by the trustees; and to award to successful candidates certificates signed by trustees and teacher. Do you not think it will serve as a stimulus to greater effort on the part of pupils? Besides, I know of no examination being given before, and now the pupils seem to think they earn promotion by "being in the eighth grade" for a few terms. Will you kindly give your opinion of my plan?

We think the idea a capital one. The County Academy examination papers, besides being drawn out with great care and good judgment by the education department on the proper work of the common school course of study, is also the official test of ability for high school work. In schools where candidates are not likely to have access to these papers before their examinations, no papers could be better adapted to the purpose. We shall henceforward endeavor to publish these in our November and May issues, so that all teachers may have access to the papers as soon as possible.

BOOK REVIEWS.

HOW TO PRESERVE HEALTH, by Louis Barkan, M. D. Publishers, American News Co., New York. Price, in cloth, \$1.00; contains a great number of valuable suggestions on preserving health; useful in the school-room and household.

LANGUAGE WORK BELOW THE HIGH SCHOOL, by Dr. Charles DeGarmo. Public School Publishing Company, Bloomington, Ill. Dr. Charles DeGarmo, professor of English and modern languages in the Normal University of Illinois, has edited an admirable series of language books for second, third and fourth year grades. They are adapted from the German, and are the result of a hundred years of experience in the schools of that country. The aim in these little books is, (1) To carry on together composition and sentence study; (2) To make the sentence study a gradual and easy approach to the study of grammar; (3) To cultivate an interest in permanent literature; (4) To relieve the children and teachers of much of the blackboard work in language teaching now required; (5) To assign each lesson definitely so as to insure brief and definite written exercises, easily examined by the teacher. The exercises are adapted to the ability of the pupil, and are intensely interesting to them. There are three numbers, each containing a year's work, strongly bound in flexible cloth covers, and the retail price is only 12 cents each.

ELEMENTARY CLASSICS: *Xenophon's Anabasis* (Exercises); *Xenophon's Anabasis*, bk. IV.; *Vergil's Æneid*, bk. X, and bk. VIII. Publishers, MacMillan & Co., London and New York. These four little volumes in the Elementary Classic series are edited, with notes and vocabularies, by eminent scholars. They are cheap, neatly printed, and with excellent notes.

HEATH'S MODERN LANGUAGE SERIES. — Molière's *Le Bourgeois Gentilhomme*, *Le Misanthrope*, *Le Malin*, *Le Tartuffe*. Edited with notes by F. E. A. Gase, and published by D. C. Heath & Co., Boston. The student of French literature will find in convenient form three of the finest plays of Molière, with explanations sufficient, with some previous knowledge of French, to enable him to read with ease and profit.

THE MORNING HOUR: a daily song service. Price, \$1.00. Publishers, Ginn & Co., Boston. This excellent song service is the joint work of three teachers and is designed to furnish a series of opening exercises for advanced and high schools. The arrangement and variety are admirable.

HAND-BOOK OF HISTORIC SCHOOLS OF PAINTING.—Price, \$1.00. Publishers, Ginn & Co., Boston. The aim of the author—Deristhe L. Hoyt, instructor in Massachusetts Normal Art School—is to give in a more simple and condensed form than has hitherto been attempted some general knowledge of the principal schools of painting, their characteristics, chief artists, and some of the most noted paintings executed by each.

SECOND ANNUAL REPORT OF THE STATISTICS OF RAILWAYS OF THE UNITED STATES to the Interstate Commerce Commission, for the year ending June 30th, 1889, pp. 563, 9 x 6 in. Washington, Government Printing Office, 1890. A valuable contribution of facts to the science of political economy, specially valuable to those who are concerned in the development of railway operations in America, and in directing these tremendous interests for the general good of the whole social organism.

THE VETO POWER, its origin, development and function in the government of the United States (1789-1889), by Edward Campbell Mason, A. B., Instructor in political economy, edited by Albert Bushnell Hart, Ph. D., Assistant Professor of History, pp. 232, 6 x 9 in. (Boston, U. S. A., Ginn & Co., 1890). This is No. 1 of the "Harvard Historical Monographs," the first of a series thus promised us by the Harvard University. The work, proper, is confined to the first 140 pages, and is presented in a well classified and most lucid manner generally. The appendix contains a list of all the vetoes with condensed outlines of the cases. The work indicates extensive reading, close and thorough research, which it puts in the possession of the reader without effort and with much pleasure.

OUR GOVERNMENT, HOW IT GREW, WHAT IT DOES, AND HOW IT DOES IT, by Jesse Macy, A. M., Professor of constitutional history and political economy in Iowa College. Revised edition. pp. XII + 296, 5 x 7½ in. Price \$0.85. (Boston, U. S. A., published by Ginn & Company, 1890). A very fine text-book for United States high schools, a capital book for any one to get a good view of the government of the United States in a small compass, a similar book on our Canadian government, would be a splendid incentive to the introduction of civics into our high school work in connection with history.

A BRIEF HISTORY OF THE EMPIRE STATE, for school and families, by Welland Hendrick, A. M. pp. 203, 5½ x 7 in. \$0.75. (Syracuse, N. Y. C. W. Bardeen, 1890). A well written, well arranged, and well printed history.

ANCIENT HISTORY for colleges and high schools, by P. V. N. Myers, acting professor of history and political economy in the university of Cincinnati; author of "Medieval and Modern History" and a General History." Part II, a HISTORY OF ROME. pp. 122, 5 x 7½ in. \$1.10. (Boston, U. S. A., Ginn & Co., 1890). Such books are now innumerable. This one will compare favorably with any of its size.

A CHART OF ENGLISH LITERATURE, with references, edited by George Edwin Maclean, Ph. D., professor of English language and literature in the university of Minnesota. pp. VII + 13, printed on one side, 8 x 12½ in. (Boston, U. S. A., Ginn & Co., 1890). This is a good conspectus of the history of English literature, giving in one view columns for minor periods, eras, ages. Authors in poetry, with dates and leading works; authors in prose, with dates and leading works. Period and sovereign. Nothing better to give a complete general view in chronological order, to the student who has a considerable acquaintance with English literature.

BOOKS RECEIVED.

GERMAN COMPOSITION, by Prof. Chas. Harris, D. C. Heath & Co. publishers.

TWO LATIN PLAYS, by Frank W. Nicolson, A. M., Harvard, and by John C. Rolf, Ph. D., Harvard. Ginn & Co., publishers.

The Annual Convention of the Nova Scotia Provincial Educational Association

Will open in the Halifax Academy on Monday, December 29th, at 8 p. m., and close on the 31st.

The programme will include:

1. A glance at the Schools of Great Britain by Dr. Allison, Superintendent of Education.
2. The German School System, by Dr. Hall, of the Normal School.

NOTE.—Dr. Allison has lately returned from a tour of inspection of English and Scottish Schools. Dr. Hall has spent the last year in Germany. He will demonstrate the superiority of their schools and pedagogical training.

3. Prof. Seth, of Dalhousie College, on Psychology and Education.

4. Prof. Andrews, of Mount Allison College, on Some Phases of Science in Relation to the Schools.

5. An educational mass meeting in the Academy of Music on Tuesday evening. His Grace Archbishop O'Brien, Lord Bishop Courtney, Hon. Provincial Secretary Fielding, Hon. Attorney General Longley have agreed to speak on this occasion. Addresses may also be expected from the Rev. Dyson Hague, of St. Paul's church, Rev. D. M. Gordon, of St. Andrews, Rev. Mr. Moore, of Grafton street church, Alderman Lyons, of the Halifax School Board, R. C. Weldon, D. C. L., M. P., Dean of the Law Faculty Dalhousie College, and the Rev. Dr. Sawyer, of Acadia College.

6. A full discussion of the report of a special committee appointed by the Superintendent of Education to draw up an improved course of study for the public schools and academies of Nova Scotia.

NOTE.—Teachers are requested to assist by suggestions or otherwise.

The excellence of the programme, and the attractions of the capital at the holiday season, should ensure a large attendance of educationists and others.

ALEX. MCKAY,
Secretary.

\$5,000 Prize Competition.

The third great Word Competition for the "Canadian Agriculturist and Home Magazine," Canada's great and popular Home and Farm Journal, is now open. The following magnificent prizes will be given free to persons sending in the greatest number of words made up out of the letters contained in the two words, "The Agriculturist": 1st prize, \$1,000 in Gold; 2nd prize, \$500 in Gold; 3rd prize, \$1,000 Grand Piano; 4th prize, \$500 Grand Piano; 5th prize, \$300 Organ; 6th prize, Ticket to England and return; 7th prize, Lady's Gold Watch; 8th prize, Gents' Gold Watch; 9th prize, China Tea Set; 10th prize, Hunting Case Silver Watch; 11th prize, Boy's Silver Watch. 25 prizes of \$10 each, 50 prizes of \$5 each, 100 prizes of \$2 each, 200 prizes of \$1 each, making a total of 386 prizes, the value of which will aggregate \$5,000. This Grand Word Making Competition is open to everybody, everywhere, subject to the following conditions: The words must be constructed from the two words, "The Agriculturist," and must be only such as may be found in Webster's Unabridged Dictionary, and in the body of the book, none of the supplement to be used. The words must be written in ink on one side of the paper only, and numbered in rotation, 1, 2, 3, and so on to the end of the list, for facilitating in deciding the winners. The list containing the largest number of words will be awarded first prize, and so on in the order of merit. Each list as it is received at the office of the "Canadian Agriculturist" will be numbered, and if two or more tie on the largest list, the first received will be awarded the first prize, the next

second and so on. Therefore, the benefit of sending in early will readily be seen. Each list must be accompanied by \$1 for six months' subscription to the "Canadian Agriculturist." One person can send in one or more lists, accompanying each list with \$1, for which the paper will be sent to any address for six months. The best family paper in Canada. It is by no means a new paper, but has been established upwards of seven years, and each year grows in the estimation of the subscriber. It contains no trashy, highly colored fiction, but has interesting stories of a higher class by the most popular authors of the day. It is eminently the paper for the home circle, and at \$2 a year is the cheapest and best paper in the market. The competition will commence now and remain open for three months. Remember, you are paying \$1 for six months' subscription to one of the best home papers in Canada, and at the same time run a good chance of winning a valuable prize. Everyone sending a list of not less than twenty words will receive a present.

Wide Awake for 1891.

(100 pages).

WIDE AWAKE, beginning with the holiday number, is permanently enlarged to one hundred pages, radiant with new and large type, a new style of page, and fresh, strong literary and pictorial attractions.

Mrs. Burton Harrison, whose story of "The Anglomaniacs" has been the sensation of the season in *The Century*, has written for WIDE AWAKE a story called "Diamonds and Toads."

Hon. John D. Long, (ex-Governor of Massachusetts), furnishes six articles, under the general title of Our Government, for the enlightenment of coming citizens, the boys and girls of to-day.

Kirk Munroe, who lately lived for a time the life of a railroad man, in all phases from parlor car to cattle cage, has put his experience into a thrilling serial for boys called Cab and Caboose. Striking pictures by Edmund H. Garnett.

Margaret Sidney's new serial, Five Little Peppers Grown Up, will tell more about Polly and Jasper and David and Joel and Phronsie, and others, as it runs through the year. Fifty charming illustrations by Charles Mente.

Marietta's Good Times will chronicle, in her own words, from her own manuscript, the childhood adventures of Marietta Ambrosi.

Miss Matilda Archaean, Van Dorn, the little girl who had a great many ancestors, is an irresistible little folks' serial, by Elizabeth Cumings.

Unusually interesting articles, some elaborately pictorial. Some Problems in Horology, by F. H. Hawley of the Smithsonian Institution, Washington, will interest High School students—three sets of Cash Prizes.

The best of Short Stories from thousands offered and solicited the past year.

The Landing of the Pilgrims, a fac-simile reproduction of Felicia Hemans' famous poem, from the original MS., now in Pilgrim Hall, Plymouth.

Figure Drawing for Children, in twelve illustrated lessons, by Caroline H. Rimmer, with four prize offers each month.

Fine ballads by Graham R. Thompson, Harriet Prescott Spofford, Mary E. Bradley and Laura E. Richards, beautifully illustrated by Garnett, Sandham and Taylor.

The ever-popular Ways to do Things, the School and Playground Stories, Tangles, Post-Office and Men and Things.

Wide Awake is only \$2.40 a year.

D. LOTHROP COMPANY, BOSTON.

Children's Literature.

WHAT "ST. NICHOLAS" HAS DONE FOR BOYS AND GIRLS.

Victor Hugo calls this "the women's century," and he might have added that it is the children's century as well, for never before in the world's history has so much thought been paid to children—their schools, their books, their pictures, and their toys. Childhood, as we understand it, is a recent discovery.

Up to the time of the issue of the *St. Nicholas Magazine* seventeen years ago literature and children's magazines were almost contradictory terms, but the new periodical started out with the idea that nothing was too good for children; the result has been a juvenile magazine genuine with conscientious purpose—the greatest writers contributing to it, with the best artists and engravers helping to beautify it, and everything tuned to the key-note of youth.

It has been the special aim of *St. Nicholas* to supplant unhealthy literature with stories of a living and healthful interest. It will not do to take fascinating bad literature out of boys' hands, and give them in its place Mrs. Barbauld and Peter Parley, or the work of writers who think that any "good-y" talk will do for children, but they must have strong, interesting reading, with the blood and sinew of real life in it,—reading that will waken them to a closer observation of the best things about them.

In the seventeen years of its life *St. Nicholas* has not only elevated the children, but it has also elevated the tone of contemporary children's literature as well. Many of its stories, like Mrs. Burnett's "Little Lord Fauntleroy," have become classic. It is not too much to say that almost every notable young people's story now produced in America first seeks the light in the pages of that magazine.

The year 1891 will prove once more that "no household where there are children is complete without *St. Nicholas*." J. T. Trowbridge, Noah Brooks, Charles Dudley Warner, and many well known writers are to contribute during this coming year. One cannot put the spirit of *St. Nicholas* into a prospectus, but the publishers are glad to send a full announcement of the features for 1891 and a single sample copy to the address of any person mentioning this notice. The magazine costs \$3.00 a year. Address The Century Co., 33 East 17th street, New York. Please mention THE EDUCATIONAL REVIEW.

A Great American Magazine.

THE SUCCESS OF "THE CENTURY" AND ITS PLANS FOR 1891

The Century Magazine is now so well known that to tell of its past success seems almost an old story. The *N. Y. Tribune* has said that it and its companion, *St. Nicholas for Young Folks*, issued by the same house, "are read by every one person in thirty of the country's population," and large editions of both are sent beyond the seas. It is an interesting fact that a few years ago it was found that seven thousand copies of *The Century* went to Scotland, quite a respectable edition in itself. The question in England is no longer "Who wants an American book?" but "Who does not see the American magazines?"

A few years ago *The Century* about doubled its circulation with the famous War Papers by General Grant and others, adding many more readers lately with the Lincoln History and Kennan's thrilling adventures on the Siberian Exile System. One great feature of 1891 is to be "The Gold Hunters of California," describing that remarkable movement to the gold fields in '49, in a series of richly illustrated articles, written by the explorers including the narratives of men who went to California by the different routes, accounts of the gold discoveries, life in the mines, the work of the vigilance committee, etc., etc. In November appears the opening article, "The First Emigrant Train to California," crossing the Rockies in 1841, by General Bidwell, a pioneer of pioneers.

Many other good things are coming—the narrative of an American's travels through that unknown land Tibet (over 700 miles over ground never before trod by a white man); the experiences of War Prisoners; American newspapers described by well-known journalists; accounts of the great Indian Fighters, Custer and others; personal anecdotes of Lincoln, by his private secretaries; "The Faith Doctor," a novel by Edward Eggleston, with a wonderfully rich programme of novelettes and stories by most of the leading writers, etc., etc.

It is also announced that *The Century* has purchased the right to print, before its appearance in France or any other country, extracts from advanced sheets of the famous Talleyrand Memoirs which have been secretly preserved for half a century. All Europe is eagerly awaiting the publication of this personal history of Talleyrand, greatest of intriguers and diplomats.

The November *Century* begins the volume, and new subscribers should commence with that issue. The subscription price, \$100, may be remitted directly to the publishers, The Century Co., 21 East 17th street, New York, or single copies may be purchased of any newsdealer. The publishers offer to send a free sample copy of a recent back number to any one desiring it.

Please mention THE EDUCATIONAL REVIEW.

OUR CASES ARE FULL

XMAS PRESENTS.

WATCHES,
RINGS,
CHARMS,
NECKLACES,
ENGLISH SOLID SILVER GOODS
IN LEATHER CASES,
WHITE ONYX CLOCKS
AND ALL KINDS OF JEWELRY,

A. AND J. HAY'S,
76 KING STREET.

At Hall's Book Store, Fredericton,

ALL THE BOOKS

Used in the Normal School, University of New Brunswick, Acadia College, Mount Allison College.

BOOKS FOR TEACHERS

Such as Sewell's Principles of Education, Payne's History of Education, Talks on Teaching, Sound Bodies for our Boys and Girls, etc.

ALSO A FULL SUPPLY OF
GLOBES, MAPS, BALL FRAMES,
ARTISTS MATERIALS, SLATING.

Books ordered from England and the United States when required.

MCGILL UNIVERSITY,
MONTREAL.

The Calendar for the Session of 1890-91 contains information respecting conditions of Entrance, Course of Study, Degrees, etc., in the several Faculties and Departments of the University, as follows:—

FACULTY OF ARTS—(Opening Sept. 15th, 1890).

DONALDA SPECIAL COURSE FOR WOMEN—(Sept. 15th).

FACULTY OF APPLIED SCIENCE—Civil Engineering, Mechanical Engineering, Mining Engineering, and Practical Chemistry. (Sept. 16th). Increased facilities are now offered in this

Faculty, by the erection of extensive workshops, which will be ready for this session.

FACULTY OF MEDICINE—(Oct. 1st).

FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE—(Oct. 1st).

FACULTY OF LAW—(Oct. 1st).

MCGILL NORMAL SCHOOL—(Sept. 1st).

Copies of the Calendar and of the Examination Papers may be obtained on application to the undersigned

(Address McGill College.)

J. W. BRAKENRIDGE, B.C.L., Act'g Secretary.

GINN & COMPANY

— INVITE ATTENTION TO —

ALLEN & GREENOUGH'S LATIN SERIES.

Grammar, Caesar, Cicero, Virgil, and Ovid, with full introductions, notes, vocabularies, maps and illustrations; Collar & Daniell's Beginner's Latin Book, Collar's Practical Composition, etc.

"There is no work of its size and scope which seems to me so complete" (as the A. & G. Grammar, Professor Tyrrell, Trinity College, Dublin).

"This Grammar is *facile princeps* among its rivals." Professor D. Y. Comstock, Phillips Andover Academy, Mass.

"The Beginner's Latin Book appears to me admirably suited for introducing young students to that difficult language." Oscar Browning, King's College, Cambridge.

GOODWIN & WHITE'S GREEK SERIES.

Grammar, Lessons, Beginner's Greek Book, (on the plan of Collar & Daniell's Beginner's Latin Book), Anabasis with vocabulary, and Seymour's Iliad with illustrated vocabulary.

"I know of no Greek grammar for English-speaking students that combines so many merits in so attractive a form." Professor D'Ooge, University of Michigan.

WENTWORTH'S MATHEMATICAL SERIES.

"The most popular books of the past decade." Arithmetics, Algebra, Geometry, Trigonometry, etc.

In the United States there are not less than 200 colleges and 3,000 schools which use the Algebra, Geometry, Trigonometry or all of these; and the books may be found in leading institutions in Great Britain, Turkey, India, China, Japan and the Hawaiian Islands.

GAGE & WILLIAMS' NATURAL SCIENCE.

Elements of Physics (Gage), Introduction to Physical Science (Gage), Introduction to Chemical Science (Williams), Laboratory Manual of General Chemistry, (Williams).

"I have not only examined but studied the Physical Science, and consider it superior as a text book to any other I have seen." Principal DeBoer, High School, Montpelier, Vt.

"I cordially recommend the adoption of Williams' Chemical Science in secondary schools." A. Ogilvie, Gordon's College, Aberdeen, Scotland.

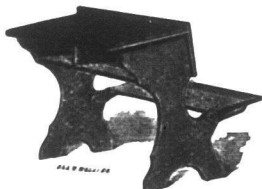
Also many other valuable text books described in our full Catalogue, which is sent free on application.

GINN & COMPANY, Boston, New York, Chicago and London.

SCHOOL FURNITURE!

SCHOOL DESKS AND SEATS

(Hardwood, Double,
\$3.00 each.



TEACHERS' DESKS FROM \$6

UPWARDS.

Write for prices and description

Mention this paper.

The best School Desk in the market for the money.

C. E. BURNHAM & SONS, Saint John, N. B.

THE ODELL TYPE WRITER.

— THE —
Ingres-Coutellier Schools

— OF —
MODERN LANGUAGES.

\$20 will buy the ODELL TYPE WRITER with 78 characters, and \$15 for the SING E CASE ODELL, warranted to do better work than any machine made.

It combines simplicity with durability, speed, ease of operation, wears longer with out cost of repairs than any other machine. Has no ink ribbon to bother the operator. It is neat, substantial, nickel plated, perfect and adapted to all kinds of Type writing. Like a printing press, it produces sharp, clean, legible manuscripts. Two to ten copies can be made at one writing. Any intelligent person can become an operator in two days. We offer \$1,000 to any operator who can equal the work of the DOUBLE CASE ODELL.

Reliable agents and Salesmen wanted, Special inducements to Dealers. For Pamphlet giving Indorsements, etc., address

ODELL TYPE WRITER CO.,
85 and 87 5th Ave. CHICAGO, ILL.

FRANCIS & VAUGHAN,
WHOLESALE & RETAIL

Boot & Shoe Manufacturers,
19 King Street, North Side,
SAINT JOHN, N. B.

FINE BOOTS & SHOES A SPECIALTY.

TEACHERS, Students, Doctors, Lawyers, Editors, Reporters, Merchants, Travellers, writers of prose and poetry, in fact all should buy a Type writer. Prices range from \$20 to \$100.

Agents wanted on commission. Address (enclosing 3 cent stamp) for particulars, TYPE WRITER AGENCY,
P. O. Box, 525, Halifax, N. S.

ONTARIO BUSINESS COLLEGE,
BELLEVILLE, ONT.

Twenty-second Year.

W. B. ROBINSON,
J. W. JOHNSON, F. C. A., Principals,

For twenty-two years this Institution has maintained the highest position and secured the widest attendance among the Business Colleges of America.

The new 100-page circular will tell you what this famous Institution can do for you.

There are now twelve students from New Brunswick and Nova Scotia in attendance.

CHROMO REWARD CARDS.

Over 1,000 new pretty designs of Landscapes, Flowers, Bouquets, Vases, Emblems, Shields, Crescents, Juveniles, Bells, Scenes, Views, Fruits, Balloons, Ships, Animals, Birds, etc. Prices for 12—size 2 1/2 x 4 1/2 inches, 10c—3 1/2 x 5 1/2, 15c—4 1/2 x 6 1/2, 25c—5 1/2 x 7 1/2, 35c. All pretty cards no 2 alike.

Fringed Chromo Cards—with silk fringe and tassels, price each, 2 1/2 x 4 1/2 inches, 4c—3 1/2 x 5 1/2, 6c—4 1/2 x 6 1/2, 8c—5 1/2 x 7 1/2, 12c, no two alike. Excellent for Rewards, etc.

New School Aids—Each set contains 136 large pretty Chromo Excelsior, Merit, and Credit cards. Price, 50c.

Alphabet Cards—600 large plain capitals, small letters and numerals printed on 300 cards 1/4 inch square, 20c.

Reading Cards—15 cards 6x9 inches, 32 pages pleasant new stories for First and Second Reader scholars, 12c.

Drawing Cards—18 different easy drawing patterns on 24 cards, size 3 1/2 x 5 1/2 inches, 30c—96 patterns, 50c.

Drawing Stencils—20 different perforated patterns of animals, birds, flowers, etc., on cards 4 1/2 x 6 1/2 inches, 30c.

School Reports—Arranged for 1, 2, 3, 4, 5, & 6 months for any school, card board, 12 for 10c; paper, 12 for 5c.

Song Book—Merry Melodies, contains 48 large pages best schools songs for all grades, manilla covers, 15c.

School Speaker—100 pages best Pieces, Recitations, Motion Songs, for children 6 to 12, or 12 to 16 years, 15c.

School Dialogues—120 pages best Dialogues for all kinds Entertainments, for ages 8 to 12, or 12 to 16, 25c.

School Entertainments—116 pages best Recitations, Dialogues, Tableaux, Charades, Concert Pieces, etc. 25c.

Teachers' Examiner—New edition, contains 400 pages and over 5,000 important Questions with Answers on all the different branches of school studies. It is the best book for teachers who wish to prepare for examination. It will carry you through. Cloth bound. Price, \$1.50.

New Price List Chromo Reward Cards, Gift Cards, Gift Books, Teachers' Books, School Supplies, and few samples Chromo Reward Cards free. All prepaid by mail. U. S. postage stamps taken. Please address,

A. J. FOUCH & CO., WARREN PA.

S. R. FOSTER & SON,

MANUFACTURERS OF

Cut Nails and Cut Spikes, Tacks, Brads, Finishing Nails, Shoe and Hungarian Nails, Etc.

Office, Warehouse and Manufactory,
GEORGES STREET, - - - ST. JOHN, N. B.

JUST RECEIVED:

Sponges, Toilet Soaps, Brushes, Perfumery, Tooth Preparations, Toilet Articles, Patent Medicines, etc., etc.

WILLIAM B. McVEY,
Dispensing Chemist,

185 UNION ST., - - - ST. JOHN, N. B.



Carpet & General House Furnishing Department.

We call the attention of all to our very large and well assorted stock of the above Goods at

ALL SEASONS OF THE YEAR.

Our large warehouses and the exceptional facilities we have for buying and selling immense quantities, enable us always to offer

A Very Large Selection

in any of the following lines

Brussels, Wool, Tapestry and Hemp Carpets, Staff Carpets and Star Linens, Laiden Squares, Wool Squares, Kensington Squares, Sack Oil Cloths, Floor Oil Cloths, Linoleums, Star Rugs, Canvas Tiles, Curtain Fasteners of all kinds, Curtains in Lace, Wool, Rep, Silk, Furniture Coverings in Canvas, Push, Danish, Rep, Silk, Baskets, Counterpanes, Comfortables, Eider Down Quilts, Table Covers, Piano Covers, Table Napery, Napkins, Doilies, Tray Cloths, Table Covers, Towels, &c., &c.—everything, in fact, comprised in the words General House Furnishings as applied to Dry Goods.

MANCHESTER, ROBERTSON & ALLISON.

27 & 29 KING STREET, - - - SAINT JOHN, N. B.

RONALD GILLIS,
SYDNEY, C. B.

CLIFTON HOUSE,

SAINT JOHN, - - - N. B.

A. N. PETERS, Proprietor.

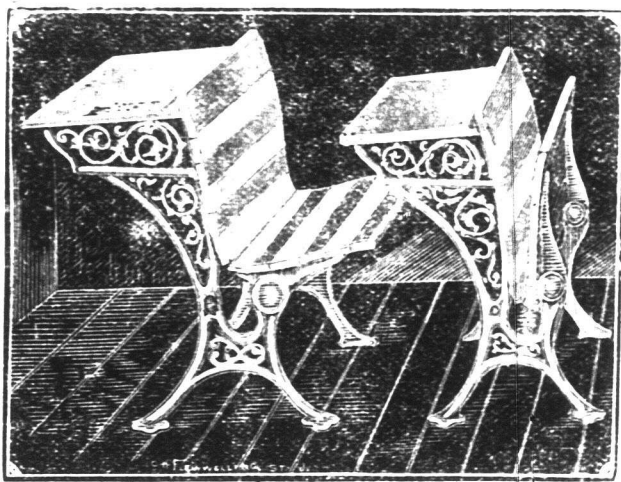
W. ROBERT MAY

JAMES S. MAY & SON,
MERCHANT TAILORS

58 Prince Wm. St.

ST JOHN, - - - N. B.

Patent School Desks,
School Furniture, etc.



Paragon School Desk,

WITH FOLDING SEAT.

No. 2, height Seat 17 in., Desk 29 in.

No. 4, height Seat 14 in., Desk 25 in.

MANUFACTURED BY

RHODES, CURRY & CO

AMHERST, N. S.

EDUCATIONAL INSTITUTIONS AT WOLFVILLE, N. S.

Acadia College.

REV. A. W. SAWYER, D.D., PRESIDENT

A four years' course, leading to the B. A. degree. Options are permitted in Latin, Greek and French and German, also between the higher mathematics and laboratory work in practical chemistry. First class rooms, laboratories for teaching. A gymnasium for the students. Charges of all kinds moderate.

Next Term opens September 25.

Apply to the President.

Horton Collegiate Academy.

I. B. BARKER, M.A., PRINCIPAL

In this Sem. there are two courses—the Normal, leading to preparation of teachers, and the Collegiate, to preparation of men for the Class B. B. A. courses at U. of N. S. Students who attend the Sem. are boarded in the Sem. and the charges are moderate. Necessary expenses for a year about \$200.

Next Term opens September 3.

Winter Term January 7, 1891.

Apply to the Principal.

Acadia Seminary.

MISS M. E. GRAVES, PRINCIPAL

This Seminary aims to provide, at a moderate expense, excellent advantages for young ladies. There are three courses of study—the Classical, the Literary, and the Musical. The course in music, Instrumental or Vocal, is thorough. In Drawing and Painting, attention is given to the study of models, casts and still life. Instruction in Elocution and Gymnastics. Charges moderate.

Next Term opens September 3.

Winter Term, January 7, 1891.

Apply to the Principal.