

THE EDUCATIONAL REVIEW.

FOR THE ATLANTIC PROVINCES OF CANADA.

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WHOLE NUMBER, 211.

NOTICE.

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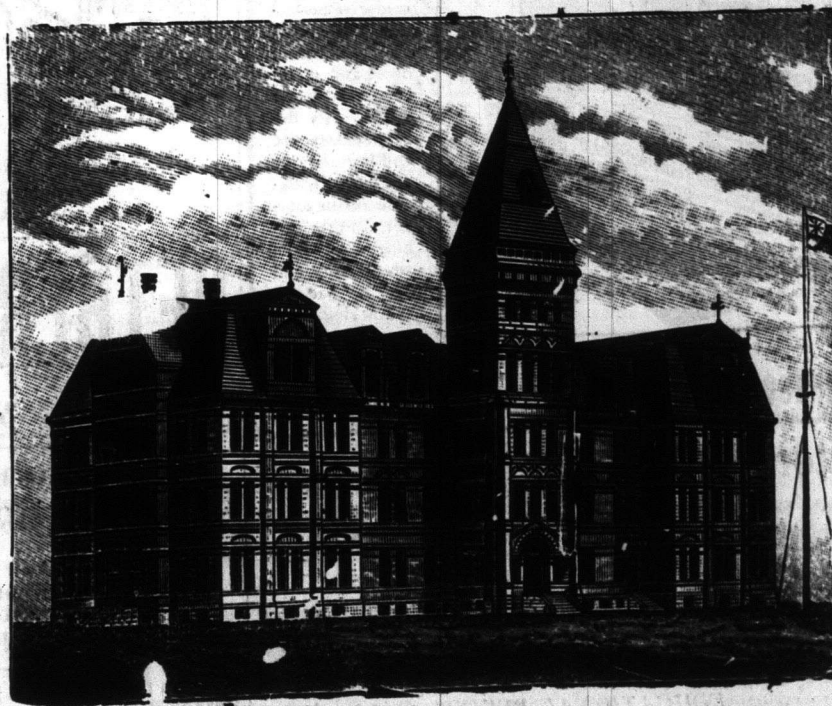
Session begins
September 7th,
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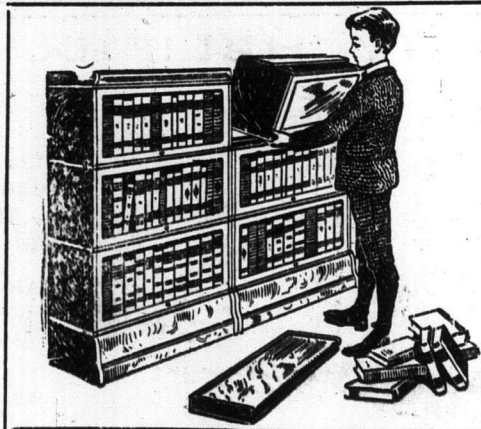


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Copies of Calendar containing full information may be obtained from the undersigned.

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The Academy is a residence school for boys. It is, and has been from the first, a Christian School. It provides five courses: Matriculation Course, Scientific Course, General Course, Business course and Manual Training Course.

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The Educational Review.

Devoted to Advanced Methods of Education and General Culture.

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And there were in the same country shepherds abiding in the field, keeping watch over their flock by night,

And, lo, the angel of the Lord came upon them, and the glory of the Lord shone round about them: and they were sore afraid.

And the angel said unto them, Fear not: for, behold, I bring you good tidings of great joy, which shall be to all people.

For unto you is born this day in the city of David a Saviour, which is Christ the Lord.

And this shall be a sign unto you; ye shall find the babe wrapped in swaddling clothes lying in the manger.

And suddenly there was with the angel a multitude of the heavenly host praising God, and saying, Glory to God in the highest, and on earth peace, good will toward men.

—Saint Luke 1: 8-14.

A HAPPY CHRISTMAS and a bright and prosperous New Year to all of our subscribers.

ENCLOSED in this month's REVIEW are reminders to those of our readers whose subscriptions are not paid. An early remittance would be very acceptable.

READ the number on the mailing address attached to the wrapper of this month's REVIEW. It shows the date to which your subscription is paid; for instance, Number 211 shows it is paid to January 1, 1905.

THE faithful teacher will make a mental summing up at the end of the year, not alone the marks of deportment and scholarship, but what cannot be estimated by marks, the influences for good which have been exerted on each child's life.

THAT education is most important which teaches ability to work with the hands as well as think with the head; to prefer honest hard work and plenty of it to some quick and easy road to gain a living; and to have faith in oneself, in country and in God.

CULTIVATE the habit of speaking well of pupils and the teachers with whom you are associated. It may be easier to pick out blemishes than good qualities, but the habit of constantly criticizing and finding fault does harm and is a severe strain on friendship.

IF YOU would give a Christmas present that will cause you to be held in grateful remembrance for days and years, think of Webster's International Dictionary. Another proof, if any further proof were needed, of the superior excellence of Webster's famous series of dictionaries is the fact that they received the Grand Prize (highest award) at the world's fair at St. Louis.

THE *New Brunswick Magazine* has been revived after a lapse of five years in its publication. Mr. John A. Bowes of St. John is the editor and publisher. Three numbers have appeared dated September, October and November, 1904. These numbers contain many excellent contributions from well known writers on history and fiction. The purpose of the magazine is evidently to extend its scope to the discussion of matters of present interest. Articles on the City Finances and Civic Ownership in St. John, written by the editor, show an intimate knowledge of the situation.

THE January number of *Acadiensis*, D. Russell Jack, editor, is a finely illustrated number, completing its story of the DeMonts-Champlain tercentenary celebration at Annapolis, St. John, and St. Croix in June last. *Acadiensis* in this and the preceding numbers has done a notable service in handing down a record of this historic event.

THE recent destruction by fire of the premises and stock of the well known publishing house of J. & A. McMillan, St. John, has caused a widespread feeling of regret. Since the establishment of this firm, more than three-quarters of a century ago, it has suffered severe calamities by fire, but its reverses have always been met with that spirit of determination which overcomes every obstacle. And it will be so in the present case.

PROFESSOR JAMES W. ROBERTSON has resigned the commissionership of agriculture under the Dominion government and will henceforth devote himself to carrying out a comprehensive project of rural education in Canada. For this Sir William Macdonald's wealth will be placed freely at his disposal. A large farm, consisting of 700 acres, has been purchased on Montreal Island. Here will be erected in the near future buildings and laboratories fully equipped for training thousands of students in agriculture, stock-raising, nature work, manual training and domestic science. And this is only one element in the scheme which two sagacious and far-seeing men have in mind for the betterment of rural education in Canada.

Opening of the Macdonald School, Kingston, New Brunswick.

On the 9th of November last the pretty little village of Kingston, Kings County, was the scene of a gathering that marked the dawn of a new era in rural school education in New Brunswick. On that day the Macdonald Consolidated School was formally opened in the presence of a large assembly of people, among whom were members of the provincial government and board of education, and persons from far and near gathered to witness an impressive sight. The interest lay, not so much in the fine new school building that crowned a knoll overlooking a scene of rare natural beauty, nor in the effective equipment for the first time employed at this place for educational purposes, but in the groups of bright, happy and well dressed children who were brought from their homes on that crisp autumn

morning in covered vans, and in admirable order took their places in the comfortable well furnished school rooms, provided by the generosity of one large-hearted benefactor.

And throughout that day as the visitors went from room to room and observed the work of the school they were no less interested in the quality of the instruction given, and the opportunities for children's minds to unfold amid such happy influences. What a contrast to the poorly constructed, ill-furnished school rooms that these children had left a few months before; and how one wished that such opportunities could be given to the children of every rural community throughout Canada; and that every teacher could be encouraged to prepare for and enter upon teaching as a life work with such inducements as this school affords.

Although the school had been in operation but a little over two months, there was evidence of efficient organization on the part of Principal Hamilton and his capable associate teachers, and a united desire on the part of parents and children to make the greatest possible use of their advantages. The seven districts which were consolidated to form the central school are average rural districts such as are to be found in New Brunswick. Under the old system the total number of pupils registered in these seven districts was 125, with an average attendance of 55, or 44 per cent. The registration at the new central school is 162, with an average attendance of 149, or 92 per cent. What an instructive comparison!

The large assembly hall of the building was filled in the afternoon and again in the evening by parents, children, and visitors from a distance to listen to the addresses of Professor Robertson, Premier Tweedie, Chief Superintendent of Education, Dr. Inch, and other prominent educationists. The occasion was an inspiring one and a deep impression was left on the minds of the earnest and deeply interested auditors.

Professor Robertson's address was one that appealed to every one, for it concerned the children. The best appliances of education, the best teachers should be given them. Even if it cost more than under the old system what asset of parents could compare in value to the priceless treasures of their children. And what better inheritance could parents leave their children than a good education, in which body, mind and soul would be rightly developed. An instance during the course of his address showed the keen sympathy he has for the welfare of chil-

dren. A parent had said that his little girl had to leave her home at a quarter to seven in the morning to catch the school van. That is too early, said Mr. Robertson; the child needs another half hour's rest in the morning. I shall see that it be arranged for the van to call at that particular point half an hour later.

With him regulations, systems, buildings, equipments exist for the single purpose of giving children the best possible chance in life. This with the strong and tactful personality of the man is the secret of his great success in this work,—a work that will surely revolutionize methods of education in Canada.

Premier Tweedie said that our country will never be great, in the sense of true greatness, until education is thoroughly developed. He showed his interest in the school by offering a prize of \$25 for the best essay on New Brunswick, and another of \$10 for the best essay on Kings County.

Dr. Inch commented on the marvelous educational change that had been brought about in this community, the beginning of better schools, he hoped, for other communities. In an address of great spirit and eloquence he pictured the advantages to the country and individual of a liberal education.

An address to Sir William Macdonald and Professor Robertson, signed by 162 children; a spirited programme of recitations and songs, carried out by the schools in the afternoon; other addresses by Hon. Mr. Sweeny, Austin Wetmore the chairman, Inspector Steeves, Principal Hamilton, Messrs John Brittain, T. B. Kidner, G. U. Hay, Inspector Mersereau, Rev. Mr. Wainwright; a reception given by the teachers, at the conclusion of which refreshments were served, brought to an end a memorable day.

The following comprise the staff of the school: D. W. Hamilton, A. M., principal; C. M. Kelly, A. B., manual training; Misses Ina E. Mersereau, Annie L. Darling, and M. A. Stewart. A teacher of domestic science has not yet been appointed.

Germany is leading the world in industrial schools, and in them nothing but practical things are taught. Out of the 1,100 schools of the sort now running, attendance is compulsory at all but 198. The law requires all young men engaged during the day in mercantile pursuits to attend one of these schools at night. And in order to accommodate those who are extra busy on week-days, classes are also held on Sunday. In this way Germany is bringing up a generation of young men who are skilled in every sort of practical trade.—*The Pathfinder*.

December in Canadian History.

December has been an important month in Canadian history. Jacques Cartier and his little band of sailors faced the rigours of a Canadian winter in 1535, and before spring twenty-five of the number perished.

Champlain began to realize the severity of a northern winter on the desolate island of St. Croix, December, 1604.

Champlain died at Quebec, Christmas day, 1635.

United States troops, under General Montgomery and Arnold made an unsuccessful attack on Quebec, December 31, 1775. Montgomery was slain.

Canada was divided into Upper and Lower Canada, December 26, 1791.

Haliburton (Sam Slick) was born December 17, 1796.

Joseph Howe was born December 13, 1804.

The Treaty of Ghent, putting an end to the War of 1812, was signed December 24, 1814.

Delegates from the colonies in British North America met in London December, 1866, to frame a constitution for the Dominion of Canada.

Sir John Thompson, premier of Canada, died at Windsor Castle December 12, 1894.

A teacher who was so sweet and lovable that every child in the room worshipped her was conducting a development lesson in which she wished to reach the word sunshine.

"What is it," she asked, "that makes everything where it is cheerful; that lights up everything, and makes life seem worth living; that you welcome in the morning and part from at night with regret; that treats rich and poor alike, beaming upon everybody, and everybody's friend, so that its unexpected appearance makes everybody feel like clapping hands?"

As she had proceeded hand after hand had gone up, until as she completed the question all the children were eager to answer.

"Well, Agnes, you may tell me," she said to one little girl.

"Why, it's you, teacher, of course," said Agnes; and every head nodded energetic approval.

This fable shows that a little shower fell just then upon that teacher's countenance; but it was a sunshower.—*School Bulletin*.

Though we travel the world over to find the beautiful, we must carry it with us or we find it not.—*Emerson*.

The Heavens in December.

Now when the earth is bare of leaves and flowers, and when the birds no longer sing in the woods, is the time to turn our eyes to the sky. During this and the next few months of winter, the stars are at their brightest as if to make up for the lack of flowers on the earth.

Every fine evening, shortly after sunset, Jupiter may be seen in the south-east well up in the heavens. If there is any doubt about this planet it can readily be decided on the 16th of the month when Jupiter will be close to the moon. It will be unusually brilliant all through the month, and vies in brightness with Venus in the south-west. Saturn is near Venus but higher up in the heavens. No other planets are prominent in the evening sky.

About eight o'clock in the middle of December the south-east part of the sky will repay a few moments' earnest attention even in the hurry of preparation for Christmas. Orion will be about thirty degrees above the horizon. Below it is the dog star, Sirius, the brightest fixed star in the heavens. The three stars which form Orion's belt will be almost vertical to the horizon. Directly above the belt is the red star Aldebaran, in one point of the V-shaped Hyades, and still further up toward the zenith are the Pleiades, of which six stars can be seen distinctly. (Read Tenmyson's apt description of the Pleiades in Locksley Hall. View them with an opera or field glass and notice what clusters of additional stars come into the field). Farther to the north (not in the direction of the zenith but towards the North star) are the twins, Castor and Pollux. Notice how they differ in color from the red star Aldebaran.

Have you ever seen the moon pass over (occult) a star in the sky? Very few persons have noticed that although it must take place very frequently. Well, you will have a chance to see Aldebaran, the bright red star, occulted by the moon on the evening of December 20. Do not miss that opportunity which may not occur again in your lifetime. Read the following interesting description from the *Scientific American*:

The disappearance of a bright star behind the moon is an extremely interesting phenomenon to watch. It gives many people their first impression of how rapidly the moon is moving among the stars. Then the very sudden extinction of the star is an impressive sight. At first the moon will appear to gain rapidly on Aldebaran. Finally this speck of light will seem to be fastened to the edge of the moon, and to stay in this position longer than the observer expects. But suddenly the star will be gone. Its reappearance from the other side will be equally startling.

This phenomenon is one of our strongest arguments that the moon has either no atmosphere or an extremely thin one.

The sun is at the winter solstice, which marks the beginning of winter, on December 22, at one a. m. On December 31, at midnight, or just as the old year is dying, the earth is at perihelion, and therefore nearest to the sun of any time during the year.

Think of it! the sun nearest to us in the coldest season. Why is this?

School Debates.

Have you ever tried the plan of having a debate in school on Friday afternoons? In many schools where it has been tried successfully excellent results have followed,—in stimulating pupils to read and study questions of the hour and of the past, in learning to express themselves in good English, and in giving them confidence in their own powers. To make a debate successful there should be careful preparation beforehand both by teacher and pupil, and the subject chosen must be interesting and not too difficult. The following subjects are suggested:

Resolved, that the Japanese are braver soldiers than the Russians.

Resolved, that life in the country has more advantages than life in the city.

Resolved, that the telephone is more useful than the telegraph.

Resolved, that the poets have done more for the world than the orators.

Resolved, that the best novelists have done more for the world than the best historians.

SUGGESTED LESSON OR TALK.—What is a hibernating animal? Name three. Name an animal that sheds its horns annually. What is usually the color of Arctic animals? Why? What animals have a government; keep slaves, and have organized armies? How do opossums and kangaroos carry their young? Why are the sparrows in all parts of the American continent? Name an animal that lives in trees, and whose color changes to match the leaves or bark. Why? Is a whale a fish? State what good some insects do to man. What harm? What are amphibians?

Note.—It will make the lesson much more interesting if the teacher or some member of the class can draw on the blackboard each animal when it is named.—*The Western Teacher*.

Earthworms Astray.

Dr. MacKay makes a further contribution to the question discussed in the October REVIEW on certain popular delusions regarding the earthworm. The authorities quoted, with his own testimony, are very interesting:

In a chat on worm migration with Dr. Stafford, of McGill University, who is not only the best authority in this department of zoology in Canada, but probably in America, he says that the eggs of earthworms are deposited in cocoons that are left in the soil along the sides of their burrows. The cocoon contains six to ten eggs and a quantity of food-albumen, and when developed to the thickness of a small pin and a few millimetres in length, they eat through one end and creep out into the soil where they find their food. They grow slowly. The cocoons are never blown about.

I can understand how a whirlwind might take up worms among other objects of like weight, and how they might be showered down elsewhere, and even on top of buildings. They are capable of climbing rough boards; and there is no difficulty in their climbing from muddy gutters on to even the roofs of buildings. Should they come out on a fine day from the still unfrozen earth, they would soon be chilled and frozen by a lowering temperature, and blown with drifting snow to quite a distance with a strong wind.

Dr. Ardley, keeper of the museum at McGill, who aids the zoological staff in obtaining specimens for dissection, said he never saw so many worms as he did once on the lawn in front of the museum on top of snow. It had fallen the previous night, and the weather had turned very mild, so that the worms came out of their burrows and through the snow. During next forenoon the snow disappeared and left them on the grass. They are plentiful in this sod, so that at the end of September and first of November 1,500 specimens for class dissections were collected in two or three evenings. In the case mentioned, the worms had come through the snow, and then the weather turned cold and numbed the worms so that they could not return to their burrows. The following day they had thawed out. If a high wind had come before this it would have carried the worms away to another locality, where in milder weather they would be thawed out. There can be little doubt but that they often come up through their burrows when the ground is frozen when the weather is mild, and that sometimes they move under the snow when the temperature is mild.

The trouble with the usual statements of such observations is that untrained observers leave the observation imperfect. The essential concomitants are not carefully noted at the time; and when the phenomenon is related, the imperfect memory supplies inferred, if not imaginary, conditions, which make a conundrum which no one can solve—because the facts alleged are not *all* facts, and are not all *the* facts pertinent to the case? A. H. M.

We pray you, set your pride
In its proper place; and never be ashamed
Of any honest calling; for all the rest, hold up your heads,
And mind your English. —Jean Ingelow.

A Pretty Christmas Thought.

A few years ago the New York *Sun* printed a pretty answer to the following letter from a little girl. We give the letter and answer here with a few slight changes:

"Dear Editor: I am 8 years old.

Some of my little friends say there is no Santa Claus. Papa says, 'If you see it in the Sun, it's so.'

Please tell me the truth; is there a Santa Claus.

VIRGINIA O'HANLON.

115 West Ninety-fifth street."

Virginia, your little friends are wrong. They do not believe except they see. They think that nothing can be which is not understood by their little minds. All minds, Virginia, whether they be men's or children's, are little.

Yes, Virginia, there is a Santa Claus. He exists as certainly as love and generosity and devotion exist, and you know that they abound and give your life its highest beauty and joy. Alas! how dreary would be the world if there were no Santa Claus. It would be as dreary as if there were no Virginias. There would be no child-like faith then, no poetry, no romance, to make tolerable this existence. We would have no enjoyment except in sense and sight. The eternal light with which childhood fills the world would be extinguished.

Not believe in Santa Claus! You might as well not believe in fairies! You might get your papa to hire men to watch all the chimneys on Christmas Eve to catch Santa Claus, but even if they did not see Santa Claus, coming down, what would that prove? Nobody sees Santa Claus; but that is no sign there is no Santa Claus. The most real things in the world are those that neither children nor men can see. Did you ever see fairies dancing on the lawn? Of course not; but that's no proof that they are not there. Nobody can deceive or imagine all the wonders there are unseen and unseeable in the world.

You may tear apart the baby's rattle and see what makes the noise inside; but there is a veil covering the unseen world which not the strongest man nor even the united strength of all the strongest men that ever lived, could tear apart. Only faith, fancy, poetry, love, romance, can push aside that curtain and view and picture the beauty and glory beyond. Is it all real? Ah, Virginia, in all this world there is nothing else real and abiding.

No Santa Claus! Thank God! he lives forever. A thousand years from now, he will continue to make glad the heart of childhood.

The shortest two despatches on record are said to be that of Lord Lawrence to Queen Victoria—"Peccavi!" (I have Sinned), and that of Sir Francis Drake to Queen Elizabeth—"Cantharides!" (The Spanish Fly).

Roderick—Percy Sapp is always talking about his family tree. Is it really a family tree?

Van Albert—I've heard so much about it I begin to think it is a chestnut.—*Chicago News*.

Christmas Poetry.

BY ELEANOR ROBINSON.

Last December the REVIEW reprinted for the use of teachers Milton's "Introduction to the Hymn on the Nativity," and Ben Jonson's verses beginning: "I sing the Birth was born tonight."

No nobler Christmas poems can be found, and until these have been committed to memory, no others need be sought for; but the children who have already learned them will not be wasting time if they study the verses we print this month.

The first selection is by William Drummond, of Hawthornden, a Scottish poet who lived from 1585 till 1649. It is a paraphrase of the angels' message to the shepherds. (Luke 1: 8-15), and is called

THE ANGELS.

"Run, shepherds, run, where Bethlehem blest appears,
We bring the best of news; be not dismayed;
A Saviour there is born more old than years,
Amidst heaven's rolling height this earth who stayed.
In a poor cottage inned, a village maid
A weakling did Him bear, who all upbears;
There is He poorly swaddled, in manger laid,
To whom too narrow swaddlings are our spheres;
Run, shepherds, run, and solemnize His birth,
This is that night—no, day grown great with bliss,
In which the power of Satan broken is;
In heaven be glory, peace unto the earth."
Thus singing, through the air the angels swarm,
And cope of stars re-echoed the same.

In line 4, "stayed"=supported, fixed firmly. He who *stayed* this earth amidst heaven's rolling height.

"Inned"=housed, as at an inn.

With lines 7 and 8, compare Ben Jonson's

"He whom the whole world could not take,
The Word, which Heaven and Earth did make,
Is now laid in a manger."

And see the letter headed "A Difference in Meaning" in the REVIEW for January, 1904.

Our second selection is Herrick's "Star Song." Robert Herrick was born in London in 1591, and spent most of his life as a clergyman in a country parish in Devonshire, dying in 1674. He is a very famous writer of lyric poetry.

THE STAR SONG.

(The wise men question the star.)

"Tell us, thou clear and heavenly tongue,
Where is the Babe but lately sprung?
Lies He the lily banks among?"

"Or say, if this new Birth of ours
Sleeps, laid within some ark of flowers
Spangled with dew-light; thou canst clear
All doubts, and manifest the where.

"Declare to us, bright star, if we shall seek
Him in the morning's blushing cheek,
Or search the beds of spices through
To find Him out?"

Star,— "No, this ye need not do;

But only come and see Him rest,

A princely Babe, in 's mother's breast."

The form and rhythm of these two poems make them particularly suitable for simultaneous recitation.

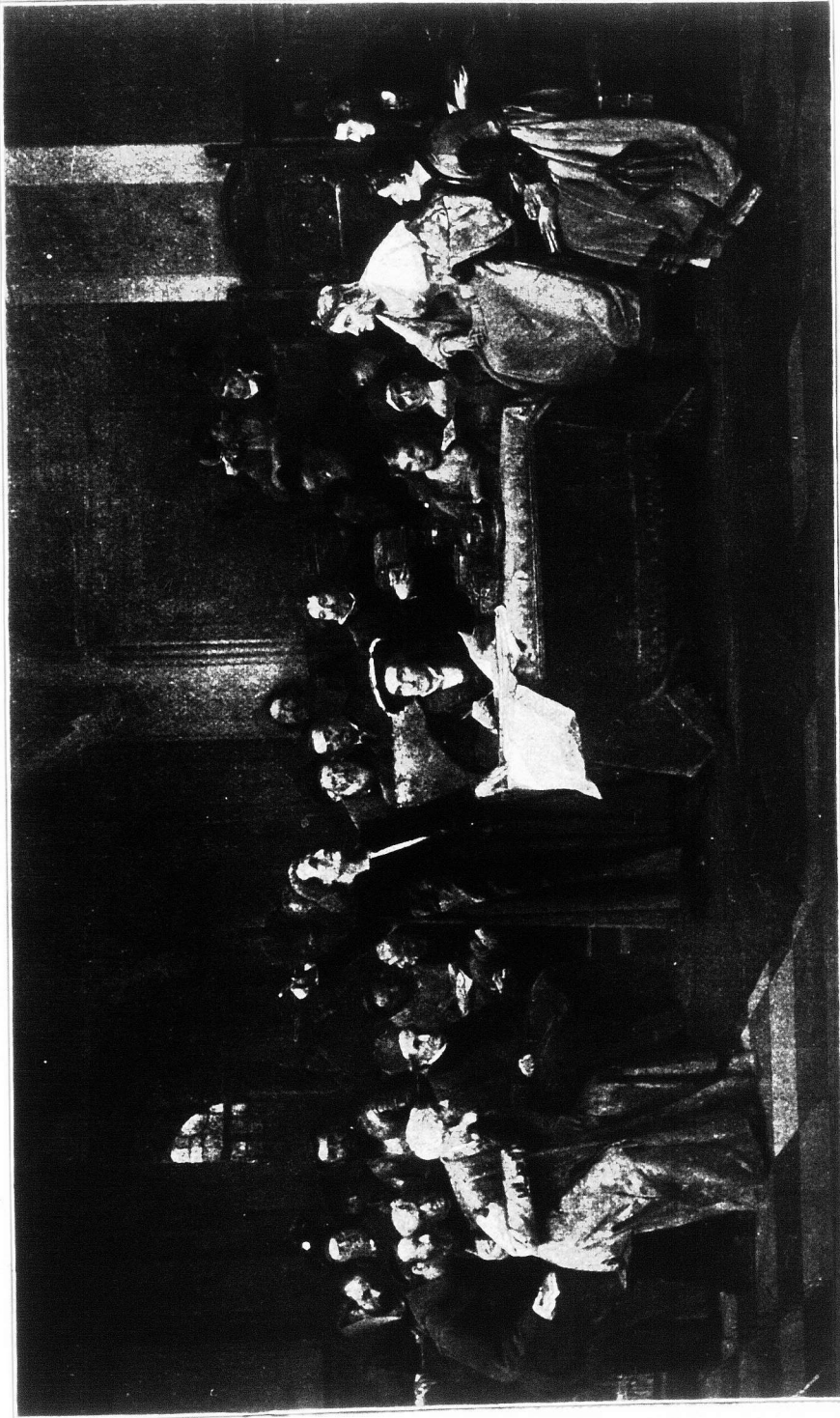
How to Make a "Hektograph" or Glue Pad

Mr. T. B. Kidner, director of manual training in New Brunswick, offers the following instructions on making a hektograph, which will be serviceable to many:

"Take (by weight) one part of best French glue or domestic gelatine, four parts of glycerine and two parts of water. Dissolve the glue in the water in a double boiler, and when all lumps have disappeared stir in the glycerine. Procure from a tinman a zinc tray of suitable length and width, and one inch deep. Pour the mixture into this tray and set it level in a cool place until a jelly is formed.

"Write a copy on smooth paper with special hektograph ink, to be obtained from any good stationer. When the copy is dry, lay it on the jelly, and smooth it down with the side of the hand. Allow the copy to remain in contact with the jelly for about one minute, and then strip it off carefully. Place a clean sheet of paper in the place of the copy, smoothing it as before and remove it after a second or two. From fifty to one hundred good copies can be made in this way. The jelly may then be re-melted ready for another copy."

Business men are unreasonable when they demand that graduates of high schools, colleges and commercial schools should at once adapt themselves to the routine of work on entering a business establishment. No one, it matters not what his aptitude may be, can do that without training. Even the business man himself, with all his self-conceit, will discover, if he looks back a few years, that his mastery of the principles and details of his work was not acquired without great labor. Assuming natural qualifications to be equal, the educated boy will learn more easily than his uneducated brother the details of any business, but he must not be expected to perform miracles by bringing theory and practice together on the first day.—*Western School Journal.*



COLUMBUS BEFORE THE COURT OF FERINAND AND ISABELLA.

Columbus, after long waiting and bitter disappointments at the Court of Spain, decided to betake himself to France for assistance to fit out a fleet. Travelling as a mendicant, footsore and weary, he presented himself at a monastery and begged for a crust of bread. The kind-hearted abbot listened to his story, and, having some influence at court, persuaded Columbus to return and renew his plea. He did so. Spreading out his maps before the court he told his story, which was eagerly listened to. His eloquence and the enthusiasm of Queen Isabella overcame all opposition, and three ships were fitted out for his voyage of discovery.

Motor Activities in Education.

A. MCKAY, Supervisor of Schools, Halifax.

Under the direction of the M. T. T. Association of Nova Scotia.

Although the exercise of the motor nerve centres and the training of the muscles are prime necessities in the education of the young, yet these facts were not generally known until recently, nor are their importance even now fully appreciated. This seems strange when we think of "the handling, dandling, tossing and caressing of the baby by its mother," of the vigorous sports and pastimes of childhood, of the playfulness of the young of all animals,—all instinctive and imperative, demands for that motor activity which is essential to healthy development.

Every muscle of the body has, within the brain, a special area of its own which becomes more highly organized and more fully correlated with the other parts of the brain, if the muscle connected with it is properly exercised. Varied and judicious exercise of all the muscles, therefore, makes effective much brain material which would otherwise become atrophied and useless. The increased activity of a greater brain mass means greater nervous energy and its better distribution, so that the conditions for mental operations are greatly improved.

If the child had been studied rather than the subjects of the curriculum it would not have taken educationists so long to discover that the restless activity of the child is one of the essential conditions of normal growth—an activity that needed not repressing but prudent directing, and even of that not too much.

Fröbel, without properly knowing the underlying principles, saw most clearly the value of children's games, and undertook by means of them to educate the child's social instincts. Rousseau saw, that up to a certain period, a varied motor activity was the fundamental element in healthy individual growth. We are yet very far from realizing in our schools the full importance of these two theories.

The activities that may be utilized by the educationist may be roughly divided into five classes: Spontaneous play; artificial games, as in the kindergarten; gymnastics; manual training exercises; and productive industry. Sometimes writing, drawing and instrumental music are spoken of as manual training. There are other important motor activities such as singing, walking, etc. Which class of activities is best suited for any given case must be determined by the pupil's stage of development and by his environment.

The kindergarten, so very helpful to poor and neglected children, is of little use to those who are in the care of educated mothers; for mother instinct, guided by intelligence and a sense of duty to one's offspring, is the truest and safest guide in the training of the very young. Up to the age of 13 or 14, spontaneous play is the most important motor activity—promoting health, muscular and mental elasticity, self-activity and initiative. It should of course be supplemented by some form of skilled hand work, of which freehand drawing is the foundation.

Out-door games in which all the students can take part should therefore be greatly encouraged. Suppose a boy between the ages of 13 and 18 has the privilege, after four or five hours in school, of spending two hours at the work-bench, or engaging in a vigorous game of ball, or hockey—which would do him the most good? At the work bench he would have a drawing lesson and make a practical application of it, get some physical exercise, and train those muscles which he might possibly afterwards have to use in some particular calling. In the game of ball his whole body would be exercised in the most favorable physical and mental conditions, quickening his heart-pulses, improving his lung power, increasing his alertness and powers of observation. In co-operating harmoniously with his playmates the social side of his nature would be cultivated. Thus he would secure that physical stamina and vigor, that self-reliance and promptitude of action and that experience and knowledge of human nature that are such large factors of success in life.

The various games and pastimes in which children, in favorable circumstances, usually engage, would probably supply all the exercise and sense images needed for physical and mental development and for the highest culture. But the necessities of a livelihood require that a pupil shall have a vocational education which shall make him self-supporting and a useful member of society. The preparation that is to make him industrially efficient may begin at about the age of 13 or 14, or even earlier if care is taken as to the nature of the exercises, for there are many of them which if introduced prematurely lead to arrested development. In other words the longer specialization is delayed, up to the end of the high school course, the higher the grade of development possible and the more likely the pupil is to discover the work in life to which he is best adapted. The advisability of a general all-round

discipline is still further indicated by the fact that the great majority of pupils do not enter the high school, but are compelled to take up such work as they can find, instead of selecting that for which they are best suited.

Experience seems to show that after the age of 12 or 13, motor exercises that bear the closest relation to actual life are the most useful in cultivating those mental and moral qualities that lead to success. For example, it is found that a very large proportion of the leaders in nearly every department of life are those who were in their youth compelled to assist in some productive industry. This would seem to justify the inference that when education is properly understood it will consist of a threefold process and that one or other of these processes will predominate according to the pupil's age and the length of time that he can afford to stay in school.

Up to the age of six, play, directed by the kindergarten when necessary, will be almost exclusively the means used to educate the child. After the age of six, play will be gradually displaced by ordinary school work and by some form of manual training, such as modelling and drawing. After the age of 13 the majority of children will devote three hours a day to ordinary school work, one or two hours to play, and the rest of the day to productive industry, its character depending somewhat upon that of the locality in which they live. Those expecting a higher education will devote more time to ordinary school work and less time to so-called manual training. Of those who can continue at school after 18 the majority will specialize in a technical school with the privilege of devoting one or two hours a day to general subjects.

In former times the great majority of the children in the rural schools had in the work on the farm a very effective means of training the executive faculties—an advantage which was denied to city children. But science and machinery have changed the conditions of rural life so that it does not now afford the same training. Besides the trend is from the country to the city. It therefore becomes necessary, in the meantime, to provide school exercises that will to some extent take the place of the old training. Very good substitutes are found in wood-work, wood turning and forge work for boys, and in household science for girls, and in gardening for both sexes. Each kind of work has its own advantages. They should be taught by well-trained educationists so that they may be made to reinforce the other subjects of the curriculum.

A department of wood work was established in Halifax in 1891. There are about 200 boys of grade VIII in attendance. The same number of girls are receiving lessons in cookery. There are now several such schools throughout Nova Scotia—all receiving a generous government grant and conducted by specially trained teachers. At Truro there are excellent training schools affiliated with the normal school. With the aid of Sir Wm. Macdonald, school gardens have been established in some of the rural schools near Truro and at Middleton. Those in Truro are under the management of Mr. P. J. Shaw. This form of motor training probably comes nearer the educationist's ideal than any other that has yet been devised in connection with school work.

Blackboard Drawing.

Every teacher has noted with pleasure the effectiveness of blackboard drawings in teaching, but not every one has observed that they cease to be of value after a few days. The drawings are put upon the board for a purpose, and when that purpose is served they should be removed. Recently we observed some very interesting facts in connection with this work. This teacher had learned that a train of cars is very dear to the heart of every child. One was neatly drawn upon the blackboard and her pupils in the geography class were to find out what it would be loaded with in the various cities and towns, and print the names on the cars. Ships were also drawn and upon the sails were printed the articles carried.

These were left on the board only a few days and new ones took their places. That was the wise thing to do. The boys carried this so far that the name of the road was indicated by its initials on the engine, while the names of the ships were also properly shown. These drawings should be equal to the best that the children can do to be helpful to them in reproducing upon slates or tablets. Use pictures to illustrate whenever possible but keep them fresh and full of suggestion.

Teachers often feel a timidity in attempting this work, but it can be done by every one after a little practice, and should be done whenever possible. There is much knowledge gained through unconscious absorption and in their sitting and musing over these pictures, many a child gets facts that fail through more pretentious methods.—*Educator-Journal*.

Things Worse Than War.

There are some things worse than war. A sordid slothfulness is worse. A cowardly acquiescence in justice is worse. It is a real revelation when to the heart of youth comes a sudden sense of the meaning of life. It is not a treasure to be preserved with miserly carefulness. It is to be nobly hazarded. It is better to fight for the good than to rail, however eloquently, against the ill. To feel for one's native land, to unite in generous comradeship with one's kind, to endure hardness for a noble cause; these things are of the essence of manhood.

In times of national peril such awakening has come. Many a man has then for the first time discovered that he has a soul. He has cried out "mine eyes have seen the glory of the Lord."

Now just here we peace men may see our most inspiring bit of unfinished business. War has been idealized, it is left to us to idealize peace. It cannot be done till we bring out all its heroic possibilities. If it means dull stagnation, selfish ease, the prosperity that can be measured in dollars and cents, there is sure to come a revulsion against it. The gospel of the full dinner pail and the plethoric pocketbook does not satisfy. If the choice is between commercialism and militarism we need not wonder if many an idealist chooses the latter as the less perilous course. It seems less threatening toward the things for which he cares.—*S. M. Crothers, in the December Atlantic.*

Decorations for a Primary Room.

There isn't any decoration that is so appreciated and enjoyed by pupils as that which they have helped to make. It isn't advisable to have the same decorations. This is valuable busy work. It is not too difficult work for little pupils and it must be done neatly and accurately. We make the links of paper strips, seven inches long and one inch wide. Such colors as green and white, or pink and white, make pretty combinations. The chains may be draped from the centre of the ceiling to the corners of the room, or portiers for the windows may be made of them.

Later in the fall we study the coloring in the fall foliage. While doing this work we gather many colored leaves. We press the prettiest leaves. When they are sufficiently pressed we decorate our windows with them by pasting them on the window glass. The coloring is beautiful, especially if the leaves are pasted on a window through which the

sun shines. The beautiful colorings and the forms of the leaves cannot be studied without learning something about the trees upon which they grow. The work is more interesting because the children have a double purpose in view, that of color study and of decoration. Pretty borders for the blackboards may be made of the pressed leaves.

As Christmas approaches, decorations appropriate to that month may be easily made. We have made borders of evergreen twigs at the tops of the blackboards and hung on these free-hand cuttings in colored paper.

In the spring we interest the children in the birds, and this is the time to display the bird pictures. I hang the pictures in the room as low as possible. A picture will attract a child's attention much sooner if it is hung almost out of reach of hand and eye.

Again, there is no better material for decoration than is the child's every-day work, such as free-hand cutting, illustrative work, drawings, writing lessons and written number work. If the teacher has some device by which she can display the work that is carefully and neatly prepared, it will be an incentive to the pupils to do their best, and any work that shows the child's *best* should be recognized as such.

School room decoration requires time in planning on the part of the teacher, but the pleasure that it affords the pupils and the profit gained amply repay for the effort.—*Esther White, in School and Home Education.*

Lesson on the Handkerchief.

Introduction: In my closed hand is something which you all carry—something very useful, although it is not always used at the proper time, nor in the proper manner. What is this?

Children—A handkerchief.

Teacher opens hand and displays a very white and pretty handkerchief.

I. Time and manner of using.

(a) When alone, if possible.

(b) If necessary to use handkerchief in public, do so in a quiet and inoffensive manner.

II. Kinds of handkerchiefs shown and described.

III. Styles of marking.

Write the word handkerchief upon the board, and during your next rest let the children form words from the letters found in the word.

Example: Hand, and, an, chief, fie, her, he, fan, friend, etc.

Sketch a handkerchief upon the board, and upon the picture write the name of the child who formed the largest list of words.—*Am. Primary Teacher,*

Interesting Notes from the West.

I have just said good-bye to the friends who have come to "congratulate" the young lady of the house on her birthday. This is one of the many pleasant social customs that have been continued by the Norwegians in their adopted home. It is twenty years since some of these people have left Norway, but there is as little change as possible in their home life. Papers and magazines in their native tongue, their literary society, and the pastors, all help keep up the use of their native language. A good many of the women speak very little English. And very few use anything but Norwegian in their own home. I have heard them remark that it seemed so odd to hear a little child talk English.

But the children pick it up very quickly when they come to school. I don't think it takes them much longer to learn to read than the average child. A difference comes in the second and third grade, where more language work is necessary. Later a dictionary is their good friend. I sometimes think that the extra mental effort demanded in using two languages has a decidedly good effect in brightening their faculties.

Inspector Boyce says that undoubtedly the Scandinavian schools are the best in his district. He thinks this is due to the great interest that is taken in the schools in these localities.

The education department is wise in encouraging the establishment of school libraries. A special grant, possibly amounting to thirty dollars a year, is given if the equipment comes up to a certain standard. One half of this *must* be spent in books from a given list.

Until lately the central government paid about ten per cent. of the cost of the schools; now this amount is somewhat less, but is partly in proportion to regularity (not number) in attendance.

The land reserved to be sold for the benefit of schools will make a very substantial fund. It consists of two sections in each township (36 square miles). There has already accumulated from sales about \$25,000; and now that homestead land near railways is almost gone, these lands are increasing rapidly in value.

Many of the country school buildings are very tasteful indeed. This of course is still more noticeable in the small towns. The school buildings, in Edmonton are really very fine, and in the newest style, with school hall, parlor, library and janitor's rooms.

Wetaskwin, a town on the railway, two-thirds

the way north from Calgary, is having a new brick building to cost \$24,000, and is planning for manual training. In both Winnipeg and Calgary the city will keep up the work begun by Sir William Macdonald.

BEATRICE E. DUKE.

Asker, Alberta.

Correcting Bad English.

"There is," and "There are." I wonder if any of the readers of the REVIEW have experienced difficulty in getting their pupils to use these words correctly. I have found children even in grade VI writing "they are," for "there are," and in the lower grades this is a common occurrence. I frequently find them, too, using "there are" for "there is." I submit a plan which I have adopted and have found very helpful.

I write on the board a number of questions, the answers to which require the use of these words. For example: How many pupils are there in school today? How many boys? How many girls. How many in grade III? How many in grade IV? How many in the first row? and so on, always of course demanding the answer in a complete sentence, as, There are thirty pupils in school today. There is one boy in the first seat. The questions may vary from day to day. They may include questions about everything in the school room. I have found this very helpful in ungraded schools. Besides giving them practice in the use of these words, it is excellent "busy work" when the teacher is engaged with the higher grades. The little folk become quite interested in the work. It is a little change. They must look round and count the pupils, and they enjoy that.

I follow the same plan with other words, as seen, saw, did and done. I think the best way is to take a few at a time. Give them plenty of practice in the use of these words. I try to notice the most common errors and deal with these first. I think the only way to get rid of these mistakes is to so accustom pupils to the use of the proper form of the word, that they will not think of the wrong one.

Sydney Mines, C. B.

A. B. M.

My children had a hard time to remember that the blood flows away from the heart through the arteries and back through the veins, until I wrote the words "arteries" and "away" beside each other on the board and the children saw that both began with the same letter. Not one has mixed veins and arteries since. The initial letters of the Great Lakes may be arranged, H. O. M. E. S. One of my boys said, "We won't ever forget the Great Lakes because we like to think of our homes." Try to associate ideas whenever possible.—*Primary Education.*

Drawing for the Lower Grades—No. I.

BY F. G. MATTHEWS, PRINCIPAL TRURO MANUAL TRAINING SCHOOL.

INTRODUCTORY.

Drawing is often looked upon as needing special talent. This is not so. In any class the same variations with regard to quality of work exists as in any other subject. When it is more freely recognized that drawing is an extremely useful factor in general education, it will be found that it can be taught as systematically and gradually as arithmetic, reading or writing. To obtain the best results,

teacher, by sufficient preparation and the adoption of good methods, can produce results which will adequately repay for the time and labor spent. The subject may be taken up in various forms, such as free-hand drawing, free-arm drawing, mechanical drawing, geometrical drawing, and color work, either as brush impressions or brush work, etc. Where time and sufficient funds for material will permit, a course comprising the whole would naturally be the ideal one, but there are many schools in which pencil, paper and ruler are all that can be obtained, and on request of the editor on behalf of the teachers of such schools, the writer

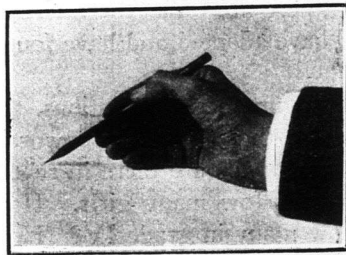


Fig. 1.—Position of hand at beginning of line. Taken from the left.

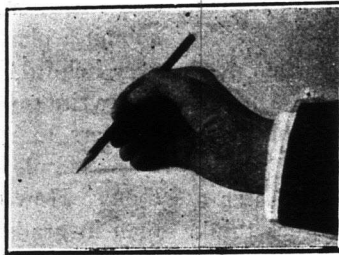


Fig. 2.—Position of hand at middle of stroke. Taken from the left.

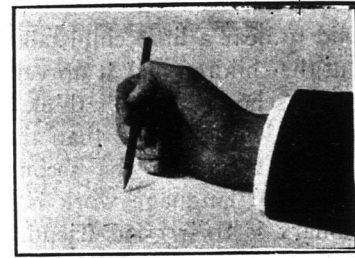


Fig. 3.—Position of hand at end of stroke. Taken from the left.

drawing must be taught intelligently and methodically, otherwise it becomes uninteresting and useless to the pupil. The old plan of giving out copies to each child, and the teacher giving individual attention, has long been discarded by the best teachers. Collective teaching from the blackboard has so many advantages that they scarcely need repeti-

tion; the great saving of time through teaching the whole class the same thing at the same time, the demonstration of proper methods of procedure and reasons for steps taken, the easy correction of errors, and the fact that the pupils are stimulated to try to imitate the teacher's work, are sufficient reasons for the adoption of this method. It is not absolutely necessary for the teacher to be an artist. Any

will endeavor, in the course of a few articles, to throw out some suggestions for a combined course of freehand and ruler drawing for young children. The teacher should bear in mind that the aim of the work is to train the eye to see correctly, and the hand to reproduce what the eye sees. The former

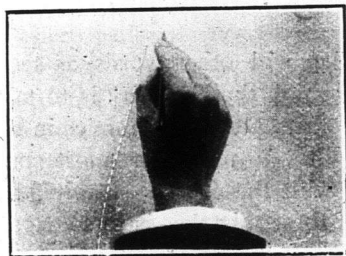


Fig. 4.—Position of hand for horizontal work. Taken from above.

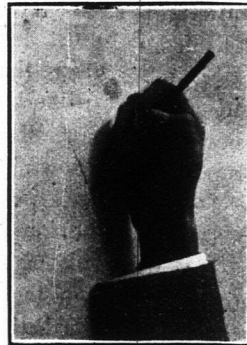


Fig. 5.—Position of hand for oblique line—left to right. Taken from the left.

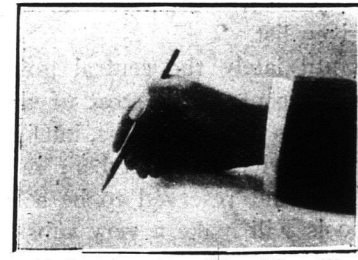


Fig. 6.—Position of hand for oblique line—right to left. Taken from the left.

is the more important, as it cultivates a sense of proportion; for the most beautifully lined drawing would be worthless if it did not give a correct idea of form. It is also more difficult to attain than skill in execution, and consequently all sorts of devices have been used to produce a drawing like the original. Practice, however, will overcome this difficulty, and the teacher should therefore see that

the teacher should bear in mind that the aim of the work is to train the eye to see correctly, and the hand to reproduce what the eye sees. The former

the children get plenty of practice. When an object or copy is placed before a class, the first thing to be done is to study its proportions. A few questions, occupying as many minutes, will be sufficient. The next step is the "setting out" of the drawing by means of construction lines. These, after the first few lessons, should be suggested by the children, as it gives splendid practice in eye-work. Next put in the main lines, and lastly the details. This method of procedure is applicable to every drawing, from the most simple to the most complex. As is the case with every tool, the proper method of holding and using the pencil must be taught. Freehand work should be done with the wrist and fingers only, the elbow and shoulders being used a very little in drawing lines from left to right. The pencil should be held lightly between the first finger and thumb, resting on the second finger. At first it may be held about two inches from the point, but later it can be held much further away with better results. The hand should rest easily on its side, and the strokes should be made by using the joints of the wrist and fingers. It follows that the line drawn is limited in length, depending on the distance the pencil is held from the end, and the natural radius of the child's hand. A line of about one and a half inches is a fair length for a beginner. This wrist movement should be insisted on from the first, and its value will be apparent in future work. When all the children are holding the pencil correctly and have acquired the proper motion, they should be directed to draw lines in various positions, horizontal, vertical and oblique. Each new direction will require a new position for the hand. At first it will be well to take up four directions: vertical, to be drawn downwards; horizontal, to be drawn from left to right; slanting, from right to left, and from left to right, both to be drawn downwards. If this be taken as a drill for a few minutes at the commencement of each lesson, the mind will gradually become concentrated on the correct position of the hand to draw a certain line, and the correct execution will follow almost mechanically. It will be noticed that there is always a tendency for children to draw very small. This may be corrected in the earliest stages by requiring the children to draw long lines. These are not to be made in single strokes, but by a series of the strokes made before; thus the line A B is made up

A 1 2 3 B
of three strokes, the hand being moved to a differ-

ent position for each one, which will be the natural length the hand will allow, viz., from $1\frac{1}{2}$ to 2 inches (a little more than double the length of the strokes in the line A B). This rule should be adhered to with lines in all directions, taking care that the correct positions of the hand and pencil are maintained. To prevent monotony, these lines may now be involved in simple figures, such as the square, oblong, triangles, rhombus, rhomboid, etc. These may be drawn on the blackboard by the teacher first, or, better still, during the "drill," from the teacher's dictation, as this will make the children more readily acquainted with the terms vertical, oblique, right angle, etc., and also entails closer attention than if the blackboard only be used. A short lesson of this description would be somewhat as follows: "Draw a horizontal line nearly the width of your paper. From the left hand end draw a vertical line upwards about half the length of the horizontal. Join the upper end of this line to the right hand end of the first. What figure is the result? (A right angled triangle). Now draw a vertical line from the right hand end of the horizontal line *in a downward direction*, making it the same length as the other vertical line. Connect the lower end of this line with the left hand end of the horizontal line. What shape have we now? (A rhomboid). The children can be made acquainted with these names as each new figure is used, giving a simple definition that can be readily understood; thus a rhomboid could be defined as 'an oblong pushed out of shape.'"

Christmas Holiday Game.

Every answer to the following questions is the title of one of Shakespeare's plays:

1. Who were the lovers?
2. Where did they meet?
3. What answer did she make to his proposal?
4. What was their courtship like?
5. From whom did he buy the ring?
6. Who were best man and bridesmaid?
7. Who were the ushers at the wedding?
8. Who entertained them on their wedding tour?
9. Who were the chefs?
10. What was their first quarrel about?
11. What was her disposition like?
12. What was his chief occupation after marriage?
13. What Roman general affected a reconciliation?
14. What did the world say?

Answers next month.

The Beginnings of Physics and Chemistry.

By J. BRITAIN, Director Macdonald Rural Schools, Woodstock, N. B.

Unless great pains have been taken with the arguments, it will be found that most young people, after witnessing the usual experiments intended to demonstrate the reasonableness of the molecular and atomic theories, will have failed to see the point. If you ask why they believe that bodies are made up of minute particles too small to be seen (don't use the word *molecules* in this question), they will tell you that they believe this because they expand when heated, contract when cooled, etc.

Now, the immediate ground of their belief in molecules should not be that bodies expand and contract when heated and cooled. They should believe that bodies are made up of molecules because this belief enables them to *explain how* (not *why*) bodies expand and contract when heated and cooled—and to *explain* many other physical phenomena.

In the same way, we believe that molecules are made up of *atoms* because that belief enables us to *explain* the charring of wood, and many other chemical phenomena.

The scientific argument for the existence of a Deity is logically the same as that for the existence of molecules and atoms. The belief in God enables us to explain many things in human life and in the universe beyond, which would otherwise be inexplicable. Indeed, to most of us, without the belief in God, the world and life would be a bewildering chaos. And so would physics and chemistry be without the molecular and atomic theories.

I will now attempt to outline as briefly as I can, a course of arguments, based on simple experiments, suitable for children in the seventh and eighth grades of the public schools.

It seems a pity that the children should leave school, as many, probably most of them, do now, without any insight into these really simple theories which would enable them to explain so many phenomena closely related to their own lives and work.

Molecules.—Mix grains of corn and black beans (beads of different colors would answer). The beans can be seen between the grains of corn. How could the beans have mixed with the corn if either or both of them had been one solid mass? Impossible.

Taste a clear solution of sugar in water? Where is the sugar now? We can't see it, but we know it is mixed with the water by the taste. But how could the sugar have mixed with the water if each had

been one continuous mass entirely filling the space within its boundaries? Impossible. How then did they intermingle? The water and the sugar must be made up of little grains as the corn is, but too small to be seen; and the grains of sugar must have got in between the grains of water. Try to see the grains of water and of sugar by a magnifying glass or a microscope. Too small to be seen even with that help.

Heat colored water in a flask or a large test-tube. The water should fill the flask and rise part way up a small glass tube which passes through the cork. The water, when heated, rises in the tube, and sinks when cooled.

Heat a metal (copper) ball. It will expand so much that it will not pass through a ring through which it will pass easily after it is cooled. How could the water and copper expand and contract if each of them is a continuous mass filling the space within their boundaries? Seemingly impossible. It must be, I think, that the water and the copper are made up of little grains of water and of copper, and the heat caused these grains to move a little further apart thus increasing the apparent size (or volume) of the body; and when the copper and water lost heat, these grains drew more closely together, that is, the body contracted. These minute grains or particles too small for any human eye to see, are called *molecules*.

Now, why do we believe that bodies are made up of minute invisible grains or particles? We believe that bodies are made up of these particles because that belief enables us to *explain how* bodies expand when heated and contract when cooled.

The same belief enables us to *explain how* sugar dissolves in water, and will, we hope, help us to explain many other things.

Atoms.—We believe that wood, starch and sugar, like copper and water, are made up of extremely small grains (called molecules) too small to be seen. Heat slowly in a closed test-tube a piece of either of these substances. Cotton wool will answer well as it is nearly pure wood. The cotton is made up of little grains of wood—wood molecules. Drops of clear water soon condense on the inside of the tube, and a black solid remains in the bottom, which proves to be charcoal (carbon). How much cotton (wood) is there in the tube now? None—not a single molecule of wood. But the wood could not escape out of the *closed* tube. What became of the wood grains (molecules)? There must have been a little charcoal and a little water in each molecule of wood, and the heat drove the water out and left the charcoal. But

if a molecule of wood is made up of charcoal and water the charcoal in the molecule must be smaller than (weigh less) than the molecule. Then there are smaller particles than molecules, and a molecule must be made up of these minuter particles joined together. The minute indivisible (?) particles which make up a molecule are called *atoms*.

By burning hydrogen in the mouth of a bottle of air, it can be shown that water is formed by the union of hydrogen and oxygen. So the molecules of water must be made up of atoms of hydrogen and oxygen. Hence, wood molecules are made up of atoms of three kinds—atoms of carbon, of hydrogen and of oxygen. Chemists tell us that one molecule of wood contains 18 carbon atoms, 30 hydrogen atoms, and 15 atoms of oxygen. Of course, there are no atoms of wood or of water, for molecules of wood do not contain any *atoms* of wood, but only atoms of carbon, hydrogen and oxygen. Similarly, there are no atoms of water—the smallest particle of water is the molecule.

The force which binds molecules together to form a body is called *cohesion*. The force which binds atoms together to form a molecule is called *chemical affinity*.

Stories for Christmas.

A TRUE STORY.

Now, at Christmas time, Atlee's mother trimmed a very pretty tree for him, and Atlee had many presents hung on it. When it was all bare, he still liked to see the tree standing in the corner of the sitting-room; but one day his mother asked him if he wouldn't like to give the birds a treat. She said that he could put the Christmas tree on the piazza, and hang some little baskets of seeds and crumbs on the branches, so that the birds could have a Christmas tree as well as Atlee.

At first Atlee did not feel as if he could spare his tree, for he had grown so fond of seeing its graceful green boughs in the room; but after thinking of the birds, and that they could not get many worms and insects and seeds now that the snow had come, he decided that he would like to have the birds enjoy his tree.

So he and his mother took the tree to the piazza, placed it in the corner, and tied on little baskets filled with crumbs and seeds.

It was not long before the birds spied the seeds, and came twittering to the boughs, cocking their heads on one side to see whether anyone in the house were going to scare them.

Atlee and his mother sat very still and puss was asleep in a cushioned chair by the fire; so the birds ate their fill. When they looked up and said: "Chirp! Chirp!" Atlee told his mother that he thought they said: "Christmas! Christmas!"—*Mary C. Soule, in Kindergarten Review.*

Christmas in the Barn.—*Emile Poulson's, in the Child's World.*

The story of Christmas (The Story Hour).—*Kate Douglas Wiggin.*

Tiny Tim, Christmas Carol.—*Dickens.*

The Fir Tree.—*Hans Christian Andersen.*

Christmas (The Sketch Book).—*Irving.*

The Brownies' Christmas, by *Mary E. Wilkins.*

The Birds' Christmas Carol.—*Kate Douglas Wiggin.*

TO CLOSE A CHRISTMAS PROGRAMME.

Choose seven boys and seven girls. Provide each with a shield, each shield to contain a large letter of those making up the words MERRY CHRISTMAS. Teach the boys and girls to march in perfect step to a Christmas song sung by the remainder of the school. Then as the last two measures are being sung, have them form in a semi-circle, with their joyous motto in full view of all.—*Adapted from School Education.*

Raleigh's homage to his queen in spreading his cloak before her is in a way out-chivalried by the action of a little Scotch urchin of which an Edinburgh paper tells. It was in one of the poorer districts of the city, and a small, poorly clad girl was waiting with a crowd of other children for the opening of the doors of a hall where a meal was to be given. It was bitterly cold, and the child's bare feet were blue with pain. An equally ragged youngster stood at her elbow, and presently he timidly thrust his cap into her hand. "Here, lassie, stand on this," he said. "My hair 's thick, and I don't need it."

Few men know how to take a walk. The qualifications of a professor are endurance, plain clothes, old shoes, an eye for nature, good humor, vast curiosity, good speech, good silence, and nothing too much. If a man tells me that he has an intense love of nature, I know, of course, that he has none. Good observers have the manners of trees and animals. Their patient good sense, and if they add words, 'tis only when words are better than silence. But a loud singer, or a story-teller, or a vain talker profanes the river and the forest, and is nothing like so good company as a dog.—*Ralph Waldo Emerson, in November Atlantic.*

The Review's Question Box.

[All reasonable questions will be answered in this column as space may permit.]

I. CHEMISTRY TEACHER.—Please tell me how ideas of the atom and molecule can be conveyed simply and intelligently to pupils beginning chemistry and physics.

See Mr. Brittain's article on another page.

MINERALS, N. B.—How can I best interest a class of beginners in minerals? Can you name some useful books at a low price?

I think after the first two or three lessons, the subject itself will be sufficient incentive without any effort on your part. One thing, however, I can recommend. That is, encourage the children to make collections of their own. The school collection is not sufficient. You know that coin collectors are interested in coins; stamp collectors in stamps. So are mineral collectors interested in minerals. You could show your pupils some neat, attractive way of arranging and labelling their specimens, and perhaps assist them in procuring specimens not found in the section. Some of my own pupils have very good collections; but all the effort it required on my part was to suggest that a collection would be a good thing, and offer to help them in classifying specimens they should bring to school. They have brought in about two hundred pounds of rocks and minerals this year—much of which we did not need, but out of which we got some good material. They have searched ballast heaps, begged from prospectors, and sent to friends in other parts of the province for specimens. I have given them several minerals which do not belong to Cape Breton but which are common enough in the North Mountain—such as amethyst, jasper, agate, etc. It would be a good thing if teachers would encourage pupils to open correspondence with pupils of other counties for an exchange of minerals common only in particular counties. Thus Kings and Annapolis could supply the various *zeolite* minerals of the North Mountain trap in exchange for coal fossils of Cumberland, Pictou or Cape Breton, or the minerals common to the gold quartz of the southern counties. Let the mineral map help you decide where to send, what to send for, and what to give.

I am sorry I know no good book on the subject at a reasonable price. Crosby's Common Rocks is the only small book I have seen. It is very good. It is published by the Boston Natural History Society, all of whose books should be good. I would advise you, therefore, to look over their lists.

L. A. DEWOLFE.

MISS W., KINGS CO., N. S.—Please name the minerals found in the box sent with this.

Your box of minerals for identification reached me safely. I shall merely name them here, but will write upon them in future articles. No. 1 is *analcite*. No. 2 is *stilbite*. No. 3 is *calcite*. No. 4 is *chalcodony*. No. 5 is *malachite*—a copper ore. No. 6 is *iron pyrites*, described in the article on another page. Your specimen is massive, however, instead of in individual crystals.

L. A. DEWOLFE.

Mr. H. T. Perkins of Hartland, N. B., writes to the REVIEW describing a squirrel recently killed within a mile of that town. Mr. Perkins thinks it may be a chance specimen of the gray squirrel. The body is ten inches in length; the tail eight inches, and the hairs on it long, reddish next the skin, but white at the ends. The throat and under parts white. Cheeks reddish, crown of head slightly darker. The hairs of the back white or nearly so at the tips, darker near the skin, giving the gray outline.

Does anyone know of others like this having been seen or taken in New Brunswick?

Plain Living and School Work.

Goldwin Smith, of Toronto, who is now eighty years of age, and still able to do work, says that his long life and physical activity are in part due to his not having been overworked at school. He adds: "I probably, however, owe something to plain living and bodily exercise, as well as to immunity from overwork. At the school at which I first was, though it deemed itself first-class, the diet was such as I suppose an American boy would scorn. Our breakfast was bread and butter and a cup of tea. Our dinner was one helping of meat with vegetables and one helping of pudding. Our supper was the same as our breakfast. The food was good of its kind. During the four years and more which I spent at that school I was never in bed for sickness, nor do I remember that any one of my school-mates was. At college I did not overwork myself. I never worked at night. But I took regular exercise, almost always on horseback. When an examination approached, I rather reduced than increased my amount of reading, thinking that freshness and nerve would be worth more to me in the trial than the little additional amount of knowledge. I may add that, though I have never lived by rule, my general habits have been such as to preserve what my early advantages had given me. I have always taken plenty of exercise; indulged a little, in my own country, in field sports; and traversed Switzerland and the Tyrol with my knapsack. It has been my habit to work early in the morning, not late at night."

Santa Claus and the Mouse—A Story for Little Children.

"Come Ned; come Bess; come Dick. It is time to go to bed." You know Santa Claus does not come until little boys and girls are all asleep. Hang up your stockings and say good-night."

So Ned and Bess and Dick hung up their stockings by the fire. Then mamma put them to bed. Soon they were fast asleep. The house was soon so still that a little mouse came out of his hole and looked about. He saw the stockings by the fire. "Well, well!" he said, "Is it Christmas time? I shall stay and see Santa Claus." So the little mouse ran up the table cloth. He saw an apple on the table and sat down to eat it. Soon he heard sleigh-bells. Then there was a noise upon the roof. "There he is," said mousie. Down the chimney came Santa. He stood before the fire. He did not see the little mouse.

"Good evening, Santa Claus," said mousie.

"Oh, good evening, mousie," said Santa, "And how do you do?"

"I am very well," said mousie. "I just stayed up to watch you."

"I am glad to see you, mousie," said Santa.

Then he went to work. He took from his pack dolls, and books, and tops, and balls, and knives, and skates. There were toys and a woolly dog for baby Dick. He filled the stockings as full as he could. He put nuts and candy into all the little spaces. Then he stood back and looked. "I think no one could put another thing into those stockings," he said.

"I think I could," said mousie.

So Santa took down one of the stockings and put it on the table. Mousie ran up to the stocking and gnawed a little hole in the toe. "That wasn't in there before," he said.

Santa laughed and laughed. Then he said, "That is a very good joke, mousie. You shall have a Christmas cheese."

Before mousie could say thank you, he was up the chimney. The reindeers ran on to the next house.

In the morning Ned and Bess and Dick ran down early. They found their stockings full. They began to look at their things.

"See my beautiful dolly," said Bess.

"Oh, Oh! see my fine knife," said Ned. "And look at my skates!"

"Just see my doggie," said little Dick.

When the stockings were empty, Bess found the

little hole. "Why, that wasn't there last night!" she said. "How did it get there?"

The children could not tell. But we could.—
Adapted from School Education.

Must Have the Review Wherever He Goes.

"Since September I have been employed as a teacher in the public school of Duncragg, Manitoba, and knowing the value of the EDUCATIONAL REVIEW to me while teaching in Nova Scotia, I feel it a necessity in my school work here. . . . Wherever I go the REVIEW must accompany me."

H. C. R.

A Good Word from the West.

An inspector of schools in British Columbia sends the following encouraging words with his subscription: "Please accept my congratulations upon the wonderful success of your paper and its work as a leader in the educational field."

Cannot do Without It.

Find enclosed subscription for this year's REVIEW. I would not try to teach without it. Wishing you every success,

G. M.

A Pleasant Word at Parting.

"I do not wish my subscription to the REVIEW renewed, as I am not teaching now. I have been a subscriber for a number of years and have found it stimulating, instructive and interesting. I wish you every success in the good work you are doing."

N. G. H.

Not to be Imitated.

A subscriber in remitting a subscription for two years, says: "I have not paid since I subscribed for the paper; this, however, was clear negligence, which I will admit should not exist in a teacher. . . . The REVIEW has been a great benefit to me so that I would not be without it."

An Honest Confession.

A subscriber, one of the few who have caused considerable worry to the manager of the REVIEW, writes to express regret that she did not send timely notice of a change of address, by which she lost the reading of the paper for some months. She says: "I trust you may not consider me as careless in all things as I have been in this matter. I enjoy every word of the REVIEW and must not lose it. Enclosed find the amount of my indebtedness and kindly continue sending the paper to my new address."

"Humble as I am," said a low-voiced speaker at a meeting, "I still remember that I'm a fraction of this magnificent republic."

"You are, indeed," said a bystander, "and a vulgar one at that."

Mineralogy — No. II.

By I. A. DEWOLFE, NORTH SYDNEY, C. B.

Last month we began our study with soils. In reviewing these with your pupils, give talks on agriculture and industries arising therefrom. Review also the rocks we studied. In what ways can you tell quartz from feldspar? (Suggestion: Quartz is somewhat harder and heavier than feldspar, has a hackly fracture, glassy lustre, and no cleavage). Study sandstone again. Note its variation in color. In trying its hardness, you will probably find very hard grains (quartz), with softer parts—the cementing material. In other words, it is a mixture. A mixture of minerals we call a rock. The term "mineral" applies only to a compound of definite composition. Pure quartz, for example, has the same composition wherever found. It is therefore a mineral. Those who have studied chemistry recognize it in the formula SiO_2 . Feldspar also, is a mineral; but granite, being a mixture of these two minerals, with, perhaps, others in varying proportion, is a rock. The term "metal" is applied only to elements,—e. g., iron, gold, etc. Distinguish, therefore, rock, mineral, and metal. To which one does sandstone belong?

Have you ever seen little glistening scales of mica in sandstone? Where did they come from? Last month we found that some granite contained mica. Does that account for its occurrence in sandstone? Would you expect to find it in shale? Look for it. Why is it not in all sandstone and shale?

When sandstone breaks easily into large regular blocks, it is called *freestone*. Shale, you will find, often crumbles to a coarse, angular, earthy condition called *marl*. The term "marl," however, is oftener applied to earthy, impure limestone.

After having reviewed these rocks thoroughly let us get specimens of quartzite (locally called *whin*) and slate, which are the principal rocks of the southern half of Nova Scotia. They contain the gold-bearing quartz veins. Is there any resemblance between quartzite and sandstone? Is the slate hard or soft? Is it ever gritty? Was the same true of shale? Quartzite is really a metamorphic sandstone—that is, a sandstone that has been hardened and changed by heat and pressure. Slate, similarly, is metamorphic shale. It often has a form of cleavage which enables workmen to split it for roofing or school slates. Is quartzite a rock or a mineral? Remember it is not pure quartz, but also contains the various impurities and cements of sandstone.

In many parts of the province you can get both

quartzite and hard slate that contain little cubes of a brassy looking mineral. Procure specimens if possible. They are crystals of *iron pyrites*. Every mineral, if it crystallize at all, has its own way of doing so. Evaporate a solution of alum and see the shape of its crystals. Do the same with common salt, sal ammoniac, etc.

This iron pyrites from its color is sometimes called "fool's gold." Try its hardness and streak. Examine closely the faces of the cube. If you find any lines, (*striae*), see if they continue round from one face to the adjacent one; or are they at right angles on two adjacent faces? Does iron pyrites rust on exposure to the weather? Have you ever found rocks with cubical holes in them? If so, perhaps you can now account for them. Does the mineral change color when it rusts? You will wonder if it is valuable for iron. It contains a large percentage of the metal, but so much sulphur (its symbol is FeS_2) that it cannot be purified to advantage. It is worked, however, for its sulphur, for green vitriol or copperas (which is sulphate of iron), and for sulphuric acid, which needs sulphur for its manufacture. Large quantities are mined in Spain and Portugal. The name *pyrites* or *pyrite* is from the Greek *pur*, fire; because the mineral will strike fire with steel.

This mineral is very widely distributed, and its rust gives ordinary earth the common red or mud color. You can readily see that rocks containing it would crumble and decay much more rapidly than others, for every cavity left fills with water, which freezes and breaks the stone. Freestone containing it would not be a good building stone, for it would not only be liable to rapid decay, but the rusting pyrites would discolor the stone. Remember this mineral, for we shall refer to it again in the study of the common iron ores—the oxides of iron.

Christmas Song.

Why do bells for Christmas ring?
 Why do little children sing?
 Once a lovely shining star
 Seen by shepherds from afar,
 Gently moved until its light
 Made a manger's cradle bright.
 There a darling baby lay
 Pillowed soft upon the hay,
 And its mother sang and smiled,
 This is Christ, the Holy Child.
 Therefore bells for Christmas ring,
 Therefore little children sing.

—Eugene Field.

A Christmas Wish.

What blessing can I wish you, O my friends
 Save that the joyful calm of Christmastide
 Should wrap your hearts so close that never jar
 Of the world's care or grief can enter in,
 But only love to keep you pitiful,
 And faith and hope to keep you strong and true;
 "A Merry Christmas" and "A Glad New Year,"
 I wish you all, and may God's exceeding love
 Enfold your all, until His tender hand
 Shall lead you safely home to love's own land!

—Selected.

Gleanings About Christmas.

The Christmas festival of the nativity was not fixed for December 25th until the fourth century. Before that time it had been a movable feast, like Easter. Christmas has been celebrated in every month from November to April.

In England the Christmas holidays last from Christmas day until Twelfth-Night (January 6) and Twelfth-Night is observed with great ceremony. (Read during your Christmas holidays Shakespeare's merriest comedy, "Twelfth Night, or What You Will."—EDITOR.)

One of the prettiest notions for trimming a Christmas tree is a paper star with a candle in the centre. It is made like a pin-wheel, and represents the Star of Bethlehem.

In the Greek Island of Chios, on Christmas day, a tenant farmer takes a pole decorated with fruit and flowers as a present to his landlord. The offer is expressive of good will, and typical of good crops for the coming year.

Christmas trees were unknown in England until the reign of Queen Victoria. The first one was ornamented by Prince Albert for the amusement of the Princess Royal and the Prince of Wales, who were children of three and four years of age at that time.

Of all the countries in the world Norway makes the most of Christmas. Old and young wear their best clothes and join in the playing of games, Blind Man's Buff being the greatest favorite.

There is a common superstition in many countries that for a week before and after Christmas cocks crow at intervals all night long. An old English superstition is that a brand from the Christmas fire kept in the house will preserve it from fire until the next Christmas. In Scotland there is a belief that all evil spirits are powerless for harm on Christmas from midnight of December 24, to the same hour on December 25. (Let children find out other current stories and superstitions from their parents or people in the neighborhood).

In Australia, Christmas day is an out-of-door festival, celebrated in eucalyptus groves, amid blooming flowers. Roast beef and plum pudding are served in honor of the day.

The Yule log is still lighted in old country houses in England on Christmas day, and a chip from last year's log must be saved to kindle the next; otherwise dire misfortunes would befall the house and family.

In some part of rural England every mince pie partaken of under a different roof during the Christmas season insures a happy month the coming year. Every housekeeper has a stock of pies on hand to offer her friends and no excuse for not eating is permissible except "Thanks, I have eaten my twelve."

The custom of giving Christmas gifts on Christmas day is general among all Christian nations.

Christmas greens proper are the holly, mistletoe, laurel, ivy, and pine. Yew and cypress are unlucky except for churches.

For centuries the orthodox Saxon Christmas dish was a wild boar's head garnished with holly. 17 years the emperor of Germany sent Queen Victoria a boar's head as a Christmas present.

According to church history, Christ was baptized on January 6, and at first, his birthday not being recorded, that was the day celebrated; but sometime in the third or fourth century December 25 was chosen instead—to be celebrated, ever after, as Christ's birthday. The chief reason for selecting this date, just at the winter solstice—the time when the year turns its back on the short dark days of winter and sets its face toward the long bright ones of spring—was because, in those times, this was the accepted season for festivals. The Romans already celebrated it as the Saturnalia; the nations of the north called it Yule, and by a beautiful symbolism, the Christians made their feast a rejoicing that the Sun of Righteousness was rising with cheer and comfort for the world.

Santa Claus's Little Joke.

When every stocking was stuffed with dolls and balls and rings;

Whistles and tops and dogs, (of all conceivable things);

Old Kriss Kringle looked round, and saw, on the elm-tree bough,

High hung, an oriole's nest, lonely and empty now.

"Quite like a stocking," he laughed, "pinned up there on the tree!

I didn't suppose the birds expected a present from me!"
 Then Old Kriss Kringle, who loves a joke as well as the best,

Dropped a handful of flakes in the oriole's empty nest.

—Thomas Bailey Aldrich.

December Memory Gems.

Shout now! The months with loud acclaim,
 Take up the cry and send it forth;
 May breathing sweet her spring perfumes,
 November thundering from the north.
 With hands upraised, as with one voice,
 They join their notes in grand accord;
 Hail to December! say they all,
 It gave to Earth our Christ the Lord!
 —J. K. HOYT.—*The Meeting of the Months.*

In December ring
 Every day the chimes;
 Loud the gleemen sing
 In the streets their merry rhymes.
 Let us by the fire
 Ever higher
 Sing them till the night expire.

—LONGFELLOW.—*By the Fireside.*

God bless the master of this house,
 The mistress also,
 And all the little children
 That round the table go.
 And all your kin and kinsmen
 That dwell both far and near;
 I wish you a Merry Christmas,
 And a Happy New Year.

—*Old Christmas Carol.*

Out of the bosom of the Air,
 Out of the cloud-folds of her garments shaken,
 Over the woodlands brown and bare,
 Over the harvest fields forsaken,
 Silent, and soft, and slow
 Descends the snow.

—LONGFELLOW.—*Snow Flakes.*

Why does the chilling winter morn
 Smile like a field beset with corn;
 Or smell like to a mead new-shorn
 Thus on the sudden? Come and see
 The cause, why things thus fragrant be,
 'Tis He is born, whose quickening birth
 Gives life and lustre, public mirth,
 To heaven and the under-earth.

—ROBERT HERRICK.—*Christmas Carol.*

Ring out, wild bells, to the wild sky,
 The flying cloud, the frosty light;
 The year is dying in the night;
 Ring out, wild bells, and let him die.

Ring out the old, ring in the new,
 Ring, happy bells, across the snow:
 The year is going, let him go;
 Ring out the false, ring in the true.

Ring in the valiant man and free,
 The larger heart, the kindlier hand;
 Ring out the darkness of the land,
 Ring in the Christ that is to be.

—TENNYSON.—*In Memoriam.*

Full knee-deep lies the winter snow,
 And the winter winds are wearily sighing;
 Toll ye the church-bell sad and slow,
 And tread softly and speak low,
 For the old year lies a-dying.
 Old year, you must not die;
 You came to us so readily,
 You lived with us so steadily,
 Old year, you shall not die.

—TENNYSON.—*The Death of the Old Year.*

The days, as through the sunset gates they crowd,
 And summer from her golden collar slips
 "Shorter and shorter now the twilight clips
 And strays through stubble-fields and moans aloud."

I am as black as black can be
 But yet I shine.
 My home was deep within the earth
 In a dark mine.
 Ages ago I was buried there,
 And yet I hold
 The sunshine and the heat which warmed
 The world of old.
 Though black and cold I seem to be
 Yet I can glow.
 Just put me on a blazing fire
 Then you will know.
 (What is it?)

—*Selected.*

The object of religious training is to enable the child to recognize the divine laws, and to learn to obey them. These are not matters of creeds and doctrines which vary and bear more or less the human imprint, but are the messages that we hear when we listen to the inner voice. Even young children can be made to understand that this voice is not one we hear with the physical sense of hearing, but it is a voice that speaks to our minds and souls, and the more earnestly we listen and long to do its lightest bidding the clearer will be its message to us. Christian life in the home requires that the child should be started right, that he should be given, as one author expresses it, "right primary ideas on the great relations and duties of life." In no way can he obtain these as through the conversation and conduct of his elders. These directly influence his heart and imagination, and his standards of right and wrong are unconsciously fashioned after the pattern thus set. If those who compose his home circle have high ideals, are reverent, sincere, kind, thoughtful, his mind and soul will assimilate their good thoughts and deeds as surely as his body assimilates the nourishing food so carefully supplied to him three times each day.—*Mrs. Theodore W. Birney, in November Delineator.*

CURRENT EVENTS.

The province of Manitoba wants its boundaries extended to Hudson Bay, so that it may have a seaport and direct connection with the markets of Europe.

The reassembling of the Finnish diet, on the sixth of this month, is a matter of great importance to Finland. It was thought that the Russian government was opposed to its convocation; but the Czar, after convoking it for the above date, has done much to win the confidence of the Finns by decreeing that all expelled persons who have been elected delegates or are hereditary members may return to attend its sessions.

The body of the late Paul Kruger, formerly president of the South African Republic, has arrived in South Africa for burial in the Transvaal.

By her new treaty with Chile, Bolivia abandons her pretension to a Pacific port, and Chile agrees to build a line of railway to Bolivia, connecting its principal towns with the seaboard. The Bolivian section of this line is to become the property of Bolivia after twenty years.

The British troops are to be withdrawn from Egypt, with the exception of a small garrison at Cairo, and a police force similar to our mounted police, which will be called the Egyptian Military Mounted Police. The Egyptian army will remain as at present, with British officers in command.

Posts to mark the international boundary line are being made in St. John, by Messrs. T. McAvity & Sons. They are conical in shape, and between five and six feet high; and will bear on the opposite sides the words Canada and United States. Remembering just where they are to be set, along the Alaskan frontier, we might be willing to have them inscribed Canada on one side, and on the other side America. From the Canadian's point of view, it would be less provokingly definite.

The survey line for the eastern extension of the proposed new Grand Trunk Pacific railway, as might be expected, will run close to the northern boundary of the State of Maine; at one point, it is said, approaching within two hundred yards of the United States boundary.

There is much suffering in the west of Ireland again, owing to the failure of the potato crop. Famine prevails in small districts in Siberia, because of the scarcity of fish. But a worse state of affairs is reported from Porto Rico, where matters are much worse than under Spanish rule, and many people are said to be dying for want of food in a country which ought to be a land of plenty.

That the race wars in Macedonia are not due to religious antipathies between Christians and Mussulmans is shown by the fact that conflicts are now reported there between the rival Christian nationalities—Bulgarians, Servs and Greeks. Sad to say, there are atrocities committed among them equal to any committed by the Turks.

A new process of smelting and refining nickel ores promises to be of great importance to Canadian nickel interests.

In four provinces of China the viceroys have issued proclamations against the foot binding of girls.

By latest estimates, the world's population is a little over one thousand five hundred millions; of whom more than eight hundred millions live in Asia, nearly four hundred millions in Europe, something less than one hundred and fifty millions in Africa, the same number in America, north and south, and about six and a half millions in Australia and the Pacific islands.

Another specimen of the great octopus, long looked upon as a fabulous creature, has been taken in Newfoundland. It was of enormous bulk and weight, and one of its tentacles was thirty feet long.

Thirty hospitals in the United States and Canada will co-operate with a special commission of New York physicians in the study of pneumonia this winter.

A German professor claims to have proved absolutely that electricity and light are but different forms of the same force. Another scientist thinks he has proved the same of electricity and gravity. The idea is not new in either case, but the announcements are none the less important. The old notion of the sun radiating light into empty space would seem to be disproved, and we must think of space as being as dark as it is cold. Light, like heat and gravitation, is a reciprocal force, and can exist only where there is something to be lighted.

The Russian telegraph system in Siberia now extends eastward to Vladivostok, and a concession has been granted for its further extension through northeastern Siberia. The United States government has an overland telegraph connection with Nome, in Alaska. It is proposed to extend the latter to Cape Prince of Wales, and unite the two systems by wireless telegraph across Behring Strait.

A great hotel is to be built at the falls of the Zambesi, in time to accommodate the members of the members of the British Association for the Advancement of Science which is to meet there next year. At the completion of this hotel and the railway bridge across the Zambesi, Victoria Falls will become a great resort for pleasure seekers. Every means will be used to preserve the beauty of the falls unimpaired; and to this end the bridge has been so placed that the railway cannot be seen from any point from which the falls can be viewed. Electrical power-houses will be erected, and power transmitted to the copper, gold and coal fields in the region; but this will not be allowed to interfere with the natural beauties of the place, as, unfortunately, it has done at Niagara. On the north side of the river, the railway is being pushed on toward Lake Tanganyika, where steamers will continue the line of communication, which is expected ultimately to reach northward to Khartoum.

The valuable iron deposits at Lepreau, N. B., are to be opened up. The ore is said to be richer than any hitherto found in Canada or the United States.

Boxers, or Chinese rebels, have defeated the imperial troops and captured several towns. The rebellion is confined to the southern provinces.

The king and queen of Portugal are visiting England. The visit has no political significance, though a new treaty with Portugal was signed on the day of the arrival of King Carlos in London.

A rapidly increasing herd of bisons, now containing about six hundred individuals, is said to be roaming wild in the almost inaccessible region about the Great Slave Lake. Elsewhere, excepting a few hundred animals in parks and preserves, the bison is almost extinct; and the discovery of the wild herd in Canada is a matter of much interest. The wild pigeon, once so abundant, which, like the bison, suddenly disappeared within the memory of living men, is also said to have been found again in our territory. The recent discovery that elephants in India are suffering from the bubonic plague suggests that some such disease may have done more than human enemies for the destruction of both buffalo and pigeon.

Welding by electricity is brought to such perfection that the welding apparatus can be carried to a railway track and two rails joined as solidly as if they had come out of the rolling mill in one piece.

A new type of locomotive has been designed for the Southern Pacific railway in which the motive power is derived from an electric dynamo carried on the engine itself. Instead of the more direct means causing a lesser part of the energy produced to reach the driving wheels, it is claimed that the part available will be over ten times as much; and a speed of more than one hundred miles an hour is expected.

The coal fields of China are estimated to cover an area of fourteen thousand square miles, and to contain enough anthracite to supply the wants of the world, at the present rate of consumption, for two thousand years.

Grain has been successfully grown at Fort Vermillion, six hundred miles north of Edmonton; and a thousand sacks of flour from the Hudson Bay Company's mill at that place have been shipped to Arthabaska landing.

The Japanese and Russian armies in Manchuria still lie facing each other, so close as to make field movements difficult, each army apparently waiting for the other to attack. At Port Arthur, repeated assaults have at last put the Japanese in possession of an important part of the defenses; and the fortress must soon surrender or be taken by storm. All hope of its holding out until the arrival of the second Russian fleet has been abandoned. From their advantageous position on 203 Metre Hill, the Japanese have sunk two of the finest battleships of the Russian fleet in Port Arthur harbour and damaged others.

Colombia is said to be planning a canal across the isthmus of Darien, which, if built, will be a rival of the Panama canal.

The French chamber of deputies, by a very large majority, has ratified the Anglo-French treaty, including the cession of the special privileges on the so-called French shore of Newfoundland.

The native rebellion in German South West Africa is proving to be a very serious uprising, and more troops must be sent to subdue it. It is said to have in part a religious origin, and to have sprung from the preaching of white missionaries from the United States.

A convention of representatives of the zemstvos, or local representative assemblies, has met at St. Petersburg, with the consent of the Russian government; and a delegation of its members has been received by the Emperor. This is avowedly a step toward parliamentary government for Russia. The change from the present autocratic government would be great, and there is always danger in a revolution; but we have passed through this same revolution without serious disorder, and so have many of the other British colonies that enjoy representative government today.

That the Picts of ancient Britain were dwarfs, and were the same as the fairies, is argued, and perhaps proved, by a recent Scottish writer. The pygmies that still survive in the Kongo region are probably not the only race of dwarfs that the world has seen, and, by the way, a recent African explorer distinguishes between the pygmies and the dwarfs, the former living in the depths of the Kongo forest, the latter along its outer edge.

Earl Grey, the new Governor General of Canada, has arrived at Halifax and taken the oath of office.

Great Britain and Russia have completed arrangements for the investigation and settlement of the North Sea incident, in which the Hull fishermen suffered from the guns of the Russian fleet. A commission, consisting of naval officers, one British, one Russian, one appointed by France, and one by the United States, will meet in Paris; and these four or the Emperor of Austria, will choose a fifth. The commissioners will lose no time in beginning the work of investigation. In the meantime, the first part of the Russian fleet is far on its way to the seat of war, and a second division of the fleet has left the Baltic.

A disorderly, noisy room is a certain symptom of very, very poor teaching. Furthermore, no teacher can maintain good order through a series of punishments, or by commanding order. Good order is the result of tact, watchfulness, timely caution, and keen interest in the school work on the part of both teacher and pupil. Where such conditions exist, good order is not a problem.—*Oregon Teachers' Monthly.*

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With reference to the origin of the familiar expression, "so long," a correspondent of the Academy suggests that it is derived from the Norwegian "Saa Laenge," a common form of farewell, equivalent in meaning to an "au revoir," and pronounced like "so long," with the "g" softened. There was a fair number of Norwegians among the settlers in America, to judge by names, and it is quite likely the phrase was picked up from them. It is in general use among the Dutch in South Africa.

SCHOOL AND COLLEGE.

At the Oxford University freshman sports held last month, four of the events were won by Rhodes scholars from this side of the Atlantic.

A private kindergarten, managed by a committee of ladies, has been opened at Fredericton with two competent teachers in charge, Miss Helen Good, of Woodstock, and Miss Rowley, of Marysville.

Professor Melville Cumming, a native of Nova Scotia, for three and a half years instructor in agriculture at the college at Guelph, Ontario, has been appointed principal of the Nova Scotia School of Agriculture at Truro.

The Carleton County Teachers' Institute will meet in Woodstock, December 22nd and 23rd.

Miss Rosamond Archibald, of Windsor, a graduate of Acadia University, has been appointed head teacher of Horton Collegiate Academy, Wolfville, temporarily vacant by the serious illness of Mr. C. J. Mersereau.

Miss Mina Reade, of Hopewell Cope, formerly teacher of elocution at Acadia Seminary, now a teacher at the Normal school, Truro, has offered her services to the Foreign Missionary Board, and will leave for India in the spring.

The annual Winter Fair for the Maritime Provinces, which is to be held at Amherst, December 12th to 15th inclusive, is an event of great interest and importance to agriculturists. Addresses will be delivered by prominent men from Ontario and the Maritime Provinces.

It has been decided to establish an engineering school in connection with King's College, Windsor, to be located at Sydney and opened next September. The practical advantages which Sydney possesses for such a school make the choice a very fortunate one.

A fine new school building was opened at Great Village, Colchester County, on the eighth of November with appropriate ceremonies. The building is well planned and finished, having modern improvements, with two acres of ground, affording abundant space for school gardens and play grounds. The principal of the school is Mr. G. M. Huggins, an experienced and capable teacher.

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The ratepayers of Florenceville, N. B., and adjacent districts have decided to unite and form a central school at the above-named place, which for years has had the benefit of an excellent school. Meetings held in some of the districts above mentioned and addressed by Inspector Meagher and Mr. J. Brittain have aroused a great deal of interest.

The fine new academy building at Shelburne has been completed, and is now occupied by the staff of teachers and pupils who, it is needless to say, appreciate their pleasant surroundings. The heating, ventilation, furnishings, and all that tends to the equipment of a modern school, are of the most approved pattern. A valuable library of nearly 1,000 volumes, and an expensive Bausch and Lomb's compound microscope, with all necessary accessories, are among the equipments of the school. The REVIEW congratulates the principal, Mr. C. Stanley Bruce, and his staff, and the people of Shelburne on this evidence of educational progress.

A good audience assembled in the Temperance Hall, Gagetown, on Friday evening, October 28th, to hear Dr. A. M. Scott, of the University of New Brunswick, who lectured on "Stories of the Rhine." Mr. M. R. Tuttle occupied the chair. In an entertaining manner the lecturer traced the origin of the legends that clustered about that famous river. He remarked that the Grimm brothers did not originate the stories that bear their name, but merely worked up material in the shape of fairy tales that were

commonly related by the peasantry of Germany. He showed that legend-making was still going on in that land, and thought it would be a distinct benefit if in this country the people were a little less matter-of-fact and more imaginative in their habits of thought. He favored the audience with the translation of many of the legends from the German. The proceeds were for the purpose of starting a library for the grammar school.

BOOK REVIEWS.

SELECTIONS FROM WORDSWORTH. Annotated by H. B. Cotterill, A. B. Cloth. Pages 84. Price 2s. Macmillan & Co., London.

This book includes some of the most beautiful and striking poems of Wordsworth, preceded by James Russell Lowell's essay on the poet,—forming a convenient pocket edition for a quiet hour, or for leisure moments. The notes are useful and unobtrusive.

THE SONNETS OF SHAKESPEARE. With an introduction and notes by H. C. Beeching, M. A., D. Litt., Canon of Westminster. Cloth. Pages 1xvii+145. Mailing price, 65 cents. Ginn & Co., Boston.

Students of Shakespeare will welcome this beautiful and convenient little volume of the "Athenæum Press Series." Although primarily a student's edition, the book is of sufficient general interest to insure for itself a wide circle of readers. The notes are clear and comprehensive.

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THREE YEARS WITH THE POETS. Compiled by Bertha Hazard. Cloth. Pages 247. Price 50 cents, post-paid. Houghton, Mifflin & Company, Boston.

The compiler here presents to us a collection of poems suitable for the different seasons of the year, to be memorized by children. The book is designed to cover three years' work; the selections have been made with much care and judgment, and "include nothing which children have not done gladly and with steadily increasing appreciation of the pleasure to be found in books, in classes under the supervision of the compiler."

READINGS IN EUROPEAN HISTORY. By James Harvey Robinson, Professor of History in Columbia University. Vol. I. Cloth. 551 pages. Mailing price, \$1.65. Ginn & Company, Boston.

These Readings will supply a need that has long been felt by those studying the general history of Europe. For each chapter of the text there are from twenty to thirty pages of extracts, mainly from vivid, first-hand accounts of the persons, events and institutions. Volume II, which will appear early next year, begins with Europe at the opening of the sixteenth century.

THE PALMERSTON READERS. With coloured illustrations. London: Blackie & Son, Limited, 50 Old Bailey, E. C.

This is an entirely new series of readers, with illustrations in colour, and black and white. The series embraces a first and second primer, first and second infant reader, and graded readers from first to sixth book. The binding is strong, in an attractive blue colour, the printing bold and clear, the paper good, and the illustrations abundant and varied. The price is low and within the means of schools everywhere. Apart from the mechanical advantages, the educational features of the series have been deemed of the greatest importance. The matter is fresh and interesting, the lessons stimulating and admirably selected, teaching truthfulness, self-reliance and patriotism. Extracts fostering the ideas of Empire and imperial federation are introduced. The best authors have been freely laid under contribution to furnish material. An excellent feature is the appendix to each reader, containing notes and meanings, lists of difficult words, lessons in word-building and composition, and outlines of grammar. There is a variety and charm about the readers which must encourage a taste for literature, and from an educational point of view they are altogether admirable.

THE CHILDREN OF THE NEW FOREST. By Captain Marryat. Cloth. Pages 256. Blackie & Son, London.

A stirring and healthy story for children. Very suitable for a school library.

THEORETICAL GEOMETRY FOR BEGINNERS. Part IV. By C. H. Allcock, Senior Mathematical Master at Eton. Cloth. Pages 224. Price 1s. 6d. Macmillan & Co., London.

This part treats of ratio and proportion and their application to geometrical theorems and problems, with numerous exercises.

THE STORY OF THE CANADIAN PEOPLE. By David M. Duncan, B. A. (Tor.), head of the department of history, Colligate Institute, Winnipeg. Pages 428. Cloth. Price 60 cents. Geo. N. Morang & Co., Toronto.

This is an attractive book in binding, illustrations, and its textual arrangements. The author has also presented the topics in a clear and intelligent manner, with a good idea of perspective. But the title—"The Story of the Canadian People"—leads one to expect a somewhat different treatment of the subject than is found throughout the book. It is too much after the manner of the usual "History of Canada," where the interest is sacrificed to attention to matters of detail. While the book presents a well-written summary, the author has been unfortunate in the choice of a title.

THE PRISONER OF MADMOISELLE. BY Chas. G. D. Roberts JESS & Co. By J. J. B., author of "Wee MacGregor."

A LADDER OF SWORDS. By Gilbert Parker.

WHOSOEVER SHALL OFFEND. By F. Marion Crawford.

The four books named above are from the publishers, The Copp, Clark Company, Toronto. They are reserved for later notice, having been received too late for review in this number. They are all daintily bound and illustrated, and very suitable for holiday gifts.

GERMAN COMMERCIAL PRACTICE. Part I. By James Graham and Geo. A. S. Oliver. Cloth. Pages 237. Price 2s. 6d. Macmillan & Co., London.

This is the first of a series of commercial hand-books for the use of commercial students and traders, designed with a view to aid in conducting business with foreign countries. The series deals with the French, German and Spanish languages as they are applied in actual commerce, showing the English-speaking trader and student how to do and say the right thing in various circumstances.

In the opinion of William Dean Howells, Archibald Lampman, the Canadian-born poet, who died a few years ago, ranks with the strongest singers the New World has produced; and his work has won the highest praise in the mother country. Charles George Douglas Roberts, born in York County, New Brunswick, in 1860, poet, story writer, and historian, is the acknowledged leader of the Canadian school of writers of to-day, and in the opinion of Mr. Goldwin Smith he is a master of English prose.

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A HISTORY SYLLABUS FOR SECONDARY SCHOOLS. By a Committee of the American Historical Association. Cloth. Pages 375. Price \$1.20. D. C. Heath & Co., Boston.

This book, intended for teachers, outlines a four years course in history for secondary schools, with suggestions for carrying out the course, or abridging it if necessary. The full course embraces (1) Ancient history, (2) Medieval and modern European history, (3) English history, (4) American history and civil government. Outlines in pamphlet form for pupils are printed for each year's course. An authoritative presentation, such as this, by a body of experts, is deserving of the attention of instructors in history.

THE SUGGESTIVE HANDBOOK OF PRACTICAL SCHOOL METHOD. By Thos. A. Cox and R. F. MacDonald, of the London schools. Cloth. Pages 431. Blackie & Son, London.

This is one of the best guides in school management and practical teaching that we have seen. It illustrates, wherever possible, the various methods and steps, and well fulfils its purpose.

OBJECT LESSONS IN ELEMENTARY SCIENCE. By Vincent T. Murché. Stages I and II. Cloth. Pages 188 (each). Price 2s. (each). Macmillan & Co., London.

Murché's useful books on elementary science, which are known throughout the educational world, are now being issued by the publishers, Macmillan & Co., in a new and revised form. The lessons have been brought up to date, fresh illustrations added, and other improvements made to increase the usefulness of these deservedly popular books.

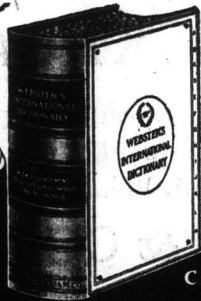
GRADED ART READERS. Book II. By Ellen M. Cyr. Cloth. 136 pages. Illustrated. Price 35 cents. Ginn & Co., Boston.

This book affords a conspicuous example of what can be done in providing for children simple stories, based on masterpieces of famous painters, so that these will appeal to the child's intelligence and avoid belittling the painting and the artist. The excellence and beauty of the illus-

trations in this book will be a revelation to children, and the simple stories forming the text will lead them to interpret the meaning of the artist.

DECEMBER MAGAZINES.

The *Atlantic Monthly* opens appropriately with Christmas—Its Unfinished Business, by S. M. Crothers, a seasonable semi-humorous appeal for peace and goodwill and toleration to all men; and there are interesting and readable papers on timely topics, stories and essays, literary studies and poems. The *Atlantic* is from its age and literary excellence the leading magazine on the continent, and this should be borne in mind by those who are choosing their reading for next year.... The *Chautauquan* is a magazine that teachers prize for the many excellent things contained in it from month to month. Two dollars a year. Chautauqua, N. Y.... The *December Delineator*, with its message of good cheer, will be welcomed to every home. The fashion pages are usually attractive, and the literary and pictorial features are of rare excellence. A selection of Love Songs from the Wagner Operas, rendered into English by Richard Le Gallienne and beautifully illustrated in colors by J. C. Leyendecker, occupies a prominent place. The *Delineator*, W. 13th Street, New York.... The *Canadian Magazine* for December has a beautiful Christmas title page, and is a finely illustrated number. Its contents are more than usually interesting to the Canadian reader, consisting of articles, stories, sketches, pictures appropriate to Christmas, and dealing with people and subjects of interest to Canadians at home and abroad. The *Canadian Magazine* furnishes evidence that it yearly increases in public estimation. \$2.50 a year. Toronto.... The number of *Littell's Living Age* for December third contains articles on the War in the Far East from *Blackwood's Magazine*, the late Sir William Harcourt and Some Children's Essays. The *Age* in its weekly issues publishes a wisely selected series of the best of the articles and stories from the old world periodicals. (The Living Age Co., Boston).



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OFFICIAL NOTICES,

(1) **TEACHING DAYS**—The first Term of School Year 1904-5 has 9 Teaching Days in ordinary Districts, and 83 days in Districts having eight weeks' vacation. The Second Term, beginning January 9th and ending June 30th 1905, has 121 Teaching Days for all Districts except the City of St. John, where the number of Teaching Days is 120.

(2) **SUBSTITUTE DAY**—By Regulation 20, Section 2, the present term closes on Friday, December 23rd. In order to enable Teachers, who would otherwise be unable to do so, to reach their homes before Christmas, permission is hereby granted to those who may so desire, to close the school for the term on Thursday, December 22nd, and to teach as a substitute for that day, any preceding Saturday.

(3) **SPECIAL MANUAL TRAINING COURSE FOR TEACHERS**—Under the provisions of Regulation 48, Section 2, the second Special Course for Licensed Teachers will begin at the Normal School on Monday January 9th, 1905. Inquiry in regard to Manual Training Courses may be addressed to Mr. T. B. Kidner, Director of Manual Training, Fredericton.

(4) **COURSES IN NATURE STUDY AND SCHOOL GARDENING FOR TEACHERS**—Eight New Brunswick Teachers are eligible for scholarships at the Macdonald Institute, Guelph, Ont., for a Three Months' Course, beginning in January, 1905. This Course will aim especially to prepare teachers to take up Nature Study in connection with School Gardens with their pupils, and to deal with the simpler aspects of general Nature Study. Each candidate appointed will receive from the Macdonald Fund five cents per mile towards traveling expenses, and \$25.00 at the completion of the course. In addition each male candidate will receive from the New Brunswick Government the sum of Seventy-Five Dollars and each female candidate the sum of Fifty Dollars, one half payable at time of enrolment at the Institute, and one-half on completion of the Course. Teachers desiring to take this course will please communicate with Prof. John Brittain, Woodstock, or with the Chief Superintendent of Education

J. R. INCH,
Chief Sup't of Education

Education Office, Fredericton, Nov. 2nd, 1904.

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