

**PAGES**

**MISSING**

# EDUCATIONAL REVIEW

DEVOTED TO ADVANCED METHODS OF EDUCATION AND GENERAL CULTURE

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## EDUCATIONAL REVIEW

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THE EDUCATIONAL REVIEW,  
Fredericton, N. B.

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The Review has received from Messrs. Swift & Company, Chicago, a Prospectus outlining some of the work done in the Continuation School by the Company at the Union Stock Yards, Chicago. The aims of the school are (1) To enable the boy or girl who has not completed the eighth grade to obtain the minimum essentials of the work given in the Public Grammar Schools, (2) To enable the boy who has an eighth grade education to obtain an education equivalent to the Chicago two year Commercial Course, (3) To train the boy for lines for which he is mentally and physically adapted, (4) To recommend capable boys for transfer or promotion when requested by department heads, (5) To train the boy in that which is directly applicable to his future work in an office.

The subjects of the course are: Penmanship, Arithmetic and English. Frequent lectures are given by experts in their line on departmental activities. These are followed up by class work and reading assignments in the Company's splendid library.

In addition to the work mentioned above, instruction is given in Applied Business Correspondence to both dictators and stenographers, the classes being held at noon hour.

In this school about 300 pupils receive one hour of instruction daily.

The work is done under the supervision of the Chicago Board of Education, which furnishes two experienced male instructors. The Swift Company furnishes all supplies and equipment.

The Company, by this splendid work for boys, are not only providing for efficiency in the service of their employees, but are contributing in a very marked degree to the making of good citizens by developing and equipping the boys for useful occupation.

It would be an excellent thing if some of our large industrial and commercial concerns, in co-operation with the educational authorities of the province, would undertake similar work.

The salary question keeps coming to the fore and organized effort in this direction is bearing fruit in increased salaries to many teachers. The Sydney Daily Post of January 4th is authority for the information that the Board of School Commissioners of that busy industrial city has given a flat increase of \$225 per annum to each teacher of the grades 1 to VIII. The salaries of Principal Creelman and his associate teachers in the Academy were also substantially increased. Minimum salaries for principals have been fixed. Teachers, other than principals, giving a satisfactory service, shall receive an annual increase of \$25 for five years. All principals shall receive an annual increase of \$15 for successful service for five years.

The teachers of Moncton, N. B., united and presented their request to the Board of Trustees, with the result that at their January meeting the Board granted them an increase of \$200 in their annual salaries.

It was stated in these columns last month that the principal of the Model School, Fredericton, N. B., was paid a salary of \$1,400 per year, and two of his associate lady teachers \$800 each, and another \$850. This was an error. The salaries are respectively, \$1,500, \$900 and \$950.

#### THANKS THE C. N. R. OPERATING STAFF

Chairman of Imperial Munitions Board Appreciates Good Work in Connection with Special Traffic Movements.

Writing to Mr. F. P. Brady, General Manager of the Canadian National Railways, Eastern Lines, Sir Joseph Flavelle, Chairman of the Imperial Munitions Board at Ottawa, expressed himself as follows:

"The work of the Imperial Munitions Board at Ottawa is complete. With the exception of a few officers of the Records Department who will remain here, the members of the staff necessary for the completion of the the liquidation of our assets, will move to Toronto.

"Before leaving Ottawa I desire to express my great appreciation of the assistance given the Board by the entire operating staff of the Intercolonial Railway. You will readily understand that many times during the last three years we have asked officers of the Company to

give special consideration to the movement of traffic, and in all cases we have met with generous response."

This is an acknowledgment from Mr. Flavelle of the excellent work done by the Canadian Government Railways in the matter of traffic movements during the most trying periods of war time, when special attention was given to overseas munition shipments.

#### THE NEW BRUNSWICK TEACHERS' ASSOCIATION

A meeting of the Executive of the New Brunswick Teachers' Association was held in the Normal School, Fredericton, in January, when a constitution setting forth the purposes and aims of the association was adopted. The Association includes at the present time, Grammar, Superior and First Class teachers only. The objects of the Association are thus described.

(1) To strive, in harmony with all educational authorities, for the advancement of sound education in the Province.

(2) To awaken and promote a healthy and professional spirit and standard of efficiency among teachers, and to seek to impress the public more strongly with the supreme importance of the work in which we are engaged.

(3) To use all legitimate means to increase the salaries of teachers and other members of the Association, in order that the best talent may be attracted to the teaching profession and retained in it.

(4) To unite in an effort for an enlarged and adequate pension scheme, so that those who make teaching their life work may look forward to a competence in their old age.

(5) To take cognizance of all matters affecting our profession, and deal with the same.

The fee for membership in the Association is \$1, payable on the first of March each year. Principal B. C. Foster, M.A., LL.D., is President, and A. S. McFarlane, M.A., Fredericton, is Secretary-Treasurer.

Are you worsted in the fight?

Laugh it off.

Are you cheated of your right?

Laugh it off.

Don't make tragedy of trifles,

Don't shoot butterflies with rifles—

Laugh it off.

Does your work get into kinks?

Laugh it off.

Are you near all sorts of brinks?

Laugh it off.

If it's sanity your after,

There's no receipt like laughter—

Laugh it off.

—Henry Rutherford Elliot.

### AN ELEMENTARY STUDY OF PHYSICAL UNITS

By John Waddell, Ph. D.

*Queen's University, Kingston, Ont.*

*"In order to get the fundamental unit of time, mass, and length, we must multiply a unit of mass by a unit of length. For example, if we buy a certain thing and get a foot pound, this is known as the fundamental unit of time."*

This was an answer in reply to the question why the units of mass, length and time are called fundamental units, and was one of a number no less absurd given by pupils of high school grade in a recent examination.

For several years, I have examined papers from about a thousand pupils annually, in which the proper use of units was a feature in the examination, and have found in many cases the crudest ideas, while in schools where the subject was well taught, the answers were a credit to both the teacher and pupil.

I have no reason to suppose that those whose examination papers came under my inspection showed less appreciation of the meaning and use of units than the average; and if so, our schools are lacking in the inculcation of that definiteness which is so important a feature of scientific education. Any teacher who is not aware that the pupil's mind is likely to be exceedingly hazy if not hopelessly befogged in this matter has probably been content if the proper numerical answer to the problem was given and has not insisted that the unit of measurement be also given. But what is the use of being able to apply any number of formulae if when the figures of the answer are obtained it is not known whether the answer is expressed in terms of watts or ohms, or of feet or hours?

It is with the hope that the suggestions I make may be of value to teachers that this article is written; and in the first place the teacher needs to realize two facts: first, that the subject of units is difficult; second, that the subject of units is easy. It is difficult if approached in an abstract manner; it is easy if taken up properly, in a concrete form, with constant application of common sense, frequent returns to general principles and abundant illustrations, especially if these illustrations are emphasized by absurd questions.

The very best beginning in the subject is, I believe, the asking of such absurd questions as, "How many feet old are you? How many years heavy are you? How many pounds tall are you?" These questions are at once seen to be nonsense; and the pupil by a very few judicious questions will be brought to explain that we cannot measure age by feet or weight by years or height by pounds.

The idea of a unit is thus arrived at. Everything that is measured must be measured in some unit, and, furthermore, must be measured in the right unit. Occasionally the unit is not expressed, as for instance when a

boy on being asked his age says he is twelve, since in this case there is no possibility of his meaning twelve days, or twelve weeks, or twelve months. When two units are involved one of these units is frequently left out. If butter is said to be sixty cents, one knows that sixty cents a pound is meant; if hay is said to be seventeen dollars, the quantity indicated, though not expressed, is a ton. In the case of potatoes and vegetables, unfortunately, the measure for approximately the same money value is now pecks where a few years ago it was bushels. Nothing, it is easily made plain to the pupil, can be measured without a unit to measure by and this unit, though sometimes understood, is commonly expressed.

The first illustration given will show that at least three different units of measurement are necessary. We must measure length in the proper units which may be inches, feet and miles, or meters and kilometers; we measure mass in pounds and tons or grams and kilograms; we measure time in seconds, weeks and years.

Length, mass and time are independent of each other; the unit of one cannot be derived from the unit of another; we can express pounds in terms of grams, but we cannot express pounds in terms of seconds. This the pupil can easily see and if he is then told that all physical measurements can be expressed in terms of one, two, or three of these units, he can understand why they are the foundation units, the fundamental units of physics.

The simplest combination of units is involved in velocity. Here again the asking of absurd questions is a very excellent method for getting at the units involved. Ask how many feet a pound, or how many tons an hour, or how many hours a mile a train moves; and the pupil will be prepared for the question how many miles an hour or how many feet a second and will see that velocity involves length and time, and involves them in a certain manner.

The unit of velocity, then, is unit length in unit time. Any unit of length may be used and any unit of time. For instance, an inch in a century, or a mile in a second might be chosen as the unit of velocity. In physics the common English unit is a foot per second and the common French unit a centimeter per second. A name might be given to such a unit; a foot per second might be called a *velo*, but no special name is usually employed for the unit, since it is easy to speak of a foot per second.

It is not simple folly to elicit by questions that one can no more tell the mass of a ball by knowing how fast it moves than one can tell the name of the boy who threw it. Absurd illustrations such as this will bring out the fact that velocity involves length and time and these units alone.

While velocity involves length and time in the simplest possible manner, acceleration involves the same

units in a somewhat more complicated way. If a body is moving at the rate of ten feet a second and some time after is moving at the rate of fifteen feet a second, it is gaining velocity, but the rate at which it is gaining velocity—the acceleration—is greater if it takes only a minute to gain the five feet a second than if it takes an hour, and still greater if it takes only a second to gain that velocity. The acceleration of five feet per second per hour. The acceleration of five feet per second per hour minute, and still less than five feet per second per second. Hence it is seen that acceleration involves time twice. It is just as inexact to speak of an acceleration of five feet a second as to speak of a velocity of five feet. In other words, it is just as necessary in acceleration to bring in time *twice* as it is in velocity to bring it in *once*. In that system of units in which unit velocity is a foot per second, the unit of acceleration is a foot per second per second. This unit has no name, just as the unit of velocity has no name.

Velocity and acceleration involve the units of length and time; density involves the units of length and mass. In this case, length is involved *three* times, unit density being unit mass contained in unit volume which is unit length cubed. In the French system unit density is the mass of one gram in a cubic centimeter, and water at 4 degrees C. has this density; there is no substance known of which one pound occupies a cubic foot, or a cubic inch and no substance has a density of unity in the English system. The density of substance compared with that of water is the specific gravity and this is more commonly determined and is sometimes *called* the density. In the French system of units the number denoting the specific gravity is really the number for the density; in the English system it is not.

In the consideration of force, pupils will need illustrations of various kinds in order to enable them to see that unless there is acceleration there is no force acting; because, since friction is always with us, the natural tendency is to think that force is necessary to *keep* a body moving at the same rate. That force varies as mass is not so difficult an idea; it is easier to move a pound than a hundred weight; it is easier to push a small boy than a big man. But in time it ought to be quite clear that force involves both mass and acceleration and nothing else.

Unit force gives unit mass unit acceleration. In the English units, unit force gives to one pound an acceleration of one foot per second per second. This expression is so long that a special name is given to this unit of force which is called a poundal. But unless the pupils have something more tangible than a definition such as the above, they will have little conception of what is meant by a poundal. Our conception of force is most closely connected with some strain on the muscles. The force which is called a *poundal*. But unless the pupils

pound in our hand. But a pound mass if allowed to fall gains a velocity of 32 feet a second in a second (therefore has an acceleration of 32 feet per second, per second) so that a pound *weight* is 32 poundals and a poundal is the weight of half an ounce, or half the weight of a letter which in pre-war times would go for two cents, but now, unfortunately, requires three cents postage.

The French unit of force gives an acceleration of one centimeter per second, per second to a gram and is called a dyne (from the Greek word for force). The *weight* of a gram is 980 dynes and so a dyne is about the weight of a milligram or approximately one-fiftieth the weight of a postage stamp.

The simplest conception of work is that given by lifting a weight; and the work done depends upon the weight lifted and the distance through which it is raised. The ordinary unit of work is the foot pound or the work of raising a pound one foot. Work, then, may be defined as the product of the force acting and the space through which it acts. Now the pound weight is not the unit force, but the poundal; and therefore unit work (in the foot pound second units) is the foot poundal, which is one thirty-second of the foot pound.

Corresponding to the foot pound is, in the French system, the gram centimeter, and corresponding to the foot poundal is the dyne centimeter. A special name is given to the dyne centimeter. It is called an erg (from the Greek word for work) and is the work which would be done in lifting the weight of one-fiftieth of a postage stamp a centimeter high. It would require a good many ergs of work to load a ton of hay upon a wagon.

Now in foot pounds or foot poundals we seem to be multiplying two units and it might be thought that we can no more multiply six feet by four pounds than we can add six feet and four pounds or than we can multiply six apples by four plums. This is true; and it is only in a conventional sense that we can multiply feet by pounds. What we are really getting at is how many pounds can be raised one foot, or what number of feet one pound can be raised by the work required to raise four pounds six feet. It is the same kind of convention as allows us to divide feet by seconds to arrive at velocity.

If units are understood up to this point there should be no further difficulty. Work which we have expressed in terms of force multiplied by length can be expressed in terms of mass and velocity; for there is merely an algebraic transformation in changing the one into the other.

Power is derived from work. It is work divided by time. Horsepower is expressed in foot pounds per second or per minute. The electrical unit, the watt, is just a special unit of power and it is not difficult to derive the units of electricity if the units we have discussed are fully understood. Lessons on units must be combined with

many exercises, and calculations of time, distance, velocity and acceleration; for instance, what velocity must a shell have on leaving an anti-aircraft gun if it is to reach a height of three miles, or how long would it take a man to reach the ground if falling from that height?

All the ordinary formulae can be derived and may be used but the pupil should be taken back to first principles from time to time, and should not be allowed to use formulae unless it is certain that he thoroughly understands them. If he uses the formulae  $S = \frac{1}{2}at^2$  it must not be necessary to tell him that the acceleration is five feet per second; it should be sufficient to tell him that a body which is moving with a velocity of twenty feet a second at a given instant is moving with a velocity of a hundred and seventy feet a second half a minute later.

Such training involves the expenditure of time and a great deal of care on the part of the teacher; but definiteness of this kind is invaluable to those pupils who intend to carry on the study of physics to an advanced stage.

*School Science and Mathematics.*

#### THE EDUCATIONAL VALUE OF THE SCHOOL GARDEN

Perhaps now, more than at any time in the history of our land is there need for a better education to be given our young people. There is a call for increased production. There is need in every community for men and women imbued with the spirit of masterful action, thoroughly prepared to cope with the difficulties of life.

We are now in the midst of a great national crisis, meeting problems which call for the best intellectual ability in our country for their solution. Once these are solved and our country at peace, who will meet the new conditions, solve the many problems which must necessarily arise in the advancement of so great a Dominion as ours? We have not to think twice to realize that it is the boys and girls of today who are to become these acting men and women of tomorrow. With us lies the responsibility of preparing these same boys and girls for the very best service they can render their country and fellow-men. Where shall this be done if not in the public schools of Canada.

We do not need the intellectual ability of a few in this district, a few more in another, but we need the service of every boy and every girl in every community. With this comes the problem of better education. By this we do not mean cramming, study from books alone, but rather the drawing out of the powers of the individual and the development of that person. It is estimated that a man who has been educated only in the common school has about one-third the producing capacity of the high school graduate and one-fifth that of the college graduate.

With the better education problem comes the problem "How to keep the child at school," for of the 16,000

children who enter Grade 1, only about 350 finish Grade XI. One of the greatest factors in the solution of this problem is the school garden. Through it the work in school is vitalized, the child becomes interested in actually doing, not merely by listening. He learns to value manual labor and comes to desire knowledge the longer he remains at school. Character building is the work of the schools. Where can we better gain strength of character than from the study of the soil, the hills, the valleys, the streams and the innumerable things of Nature and what calls for keener judgment, greater activity of mind, more determined purpose than is required in solving the problems of Nature? Thus from the schools must we get the strong minded thinking men and women so necessary to the advancement of our country.

Through the child the parents too become interested in the school. The fact that Johnny is learning to like the farm, takes an interest in making his home plot a success is a great inducement to the parents to send him back to school the next year. While the child is learning the practical, he is also getting a deeper knowledge of subjects not usually regarded as important by the unlearned. He does not leave the farm to fall in ruins because the nearby town or distant city lends an attraction, for this too has been a great drawback to the progress of our country. For a long time there has been a decadence of country population and an increase in the town population. Men are trying to meet this problem which the war has intensified. If there were ever a time when practical education should be given it is now. The schools are the best agencies to remedy this difficulty.—*Elva Claire Doton, in Rural Educational Monthly.*

#### BOOKS AND MAGAZINES RECEIVED

Tests of Progress in Arithmetic—pupil's edition—price 1 shilling net. Tests of Progress in Arithmetic—teachers' edition. Tests of Progress in English—pupil's edition—1 shilling net. Tests of Progress in English—teachers' edition. The Teachers' Book of Drawing Chats, by Clara E. Grant. Geography Stories and Famous Explorers, by R. J. Finch, F.R.G.S. All the above books belong to the Kingsway Series, published by Evans Brothers, Limited, Montague House, Russell Square, London, W. C. 1. England.

Pen Pictures of British Battles. Eyre and Spottiswoode, Limited, London, publishers. This book gives in short form an account of eleven important engagements in the recent war, including The Victory of the Falkland Isles, the Battles of the Marne, etc.

Overseas, the monthly journal of the Overseas Club, vol. III, No. 31, August, 1918.

Music is man's greatest pleasure from cradle to grave.

### CONSERVATION OF PLANT FOOD.

Conservation of Plant Food is a broad and important subject, one that scientists have worked at for years and one that is becoming more important each day. Farmers and all who work with the soil are taking the matter up; even the children in our public schools should be taught something on this topic, if we are to keep our name of being a great agricultural country.

As we look at Holland, Denmark and England, we see that they are getting as good and in many cases better returns from soil which has been worked hundreds of years, than we are from soil which has been worked for a much shorter period. They keep the soil in good condition by supplementing in proper amount the food the plant requires. We must do the same or in a few years we shall find the soil becoming "run out."

This paper will deal with general theories and practical illustrations.

The question is: how shall we raise crops without impoverishing the soil?

Our soil is a good rich soil, as good as that of Denmark or Holland. Why then are they getting better returns than we?

Because in many cases we take the soil as Nature gives it, and use it year after year, without adding plant food in sufficient quantities, until we notice a falling off in the crops, whereas in Denmark and Holland the soil is not only thoroughly cultivated, but kept in good condition.

Some methods which should be used for keeping soil fertility:

1. By experience we know that a Rotation of Crops is beneficial. For example: take two pieces of land of the same size, value and quality. On one grass is grown for 18 years, while on the other we use the following Rotation: 1st year, Hoed Crops (as potatoes, turnips, etc.); 2nd year, Grain Crops; 3rd and 4th years, grass and clover, and 5th and 6th years, pasture. At the end of the 18 years we find the second piece to be in better condition than when the test was begun, consequently it is of greater value, as well as having given greater profits. On the other hand the first piece was in poorer condition, yielding smaller crops than at first. "All work and no play makes Jack a dull boy," and this applies to soil as well as to Jack.

The reasons that a Rotation of Crops is profitable are: First, it clears the land of weeds. 2nd, it breaks up soil particles and gives a better chance for root growth. 3rd, thorough cultivation exposes the soil to oxygen and bacteria, which helps to form Nitrates, also to Carbon which unites with water to form Carbonic acid, which dissolves mineral combinations and sets free Potassium, another valuable food.

2. Live Stock Farming. Live Stock Farming is

the growing of plants to feed animals to secure manure to grow other plants. By analysis we know that manure contains a large percentage of the three most important plant foods: Nitrogen, Potassium and Phosphorus, and by experiment we know that unless manures are taken care of they lose in value. The loss in one ton from exposure of manure is of Nitrogen 41.60 per cent; Potassium, 20.76 per cent., and Phosphorus, 20.47 per cent. This loss amounts to \$4,000,000 a year in New Brunswick, or just now the value of 300,000 barrels of flour (\$13.50). These losses are caused by not having proper equipment in the stables to prevent leaching (one-half, one-third loss here), and fermentation (one-half value loss of organic and one-third N. value). The plant food which goes off in the air or down a brook to the river is a total loss.

The growing of hay and grains for market is a good way of lowering soil fertility.

3. On the roots of clovers, vetches and peas we find specialized machinery for the storing, shipping and collection of Nitrogen. The growing of these legumes adds 50-100 lbs. of Nitrogen per acre to the soil, and enriches it in humus forming material.

4. Application of Lime. It has been shown that lime added to a sour soil neutralizes the acid and makes it sweet. A sweet soil is essential in the growing of legumes. An application of lime will give an increase of 1 ton per acre in the growing of legumes.

5. By the application of sea weed or kelp we are supplying the soil with Potassium. The great potash beds in Germany were in all probability formed from this sea weed, and since the war the price of potash has risen from 4-40 cents per lb., and is practically unobtainable at this price. A way of solving this difficulty is the use of our own natural resources. Again by the application of a fertilizer made from fish waste we get Nitrogen from the flesh and Phosphorus from the bones. When bones of higher animals are ground and worked into the soil we get a phosphate that is slowly soluble. By experiment it has been shown that the effects of an application of ground bone Phosphate will be noticed for twenty years.

Now to summarize our statements:

Plant food is conserved by

1. Rotation of Crops.
2. Live Stock Farming.
3. Proper care Manures to prevent loss plant foods.
4. Application of Lime neutralizes acid and puts soil in good condition.
5. Growing of Legumes supplying (Nitrogen).
6. Use and application of our Natural Resources.
  - (a) Sea weed supplying (Potassium).
  - (b) Fish waste supplying (Phosphorus).

*Nellie K. Paget, in Rural Educational Monthly.*

**METHODS FOR TEACHING FRACTIONS**

Inspector Amos O'Blenes, M.A., Moncton.

**Reducing fractions to lowest terms.**

Drill on putting pieces together to make larger pieces, remembering that the larger pieces must be kept equal and that all the pieces in the unit must be used.

Take a stick, say 18 inches long. Divide it into 18 equal pieces. See how many kinds of larger pieces may be made from those eighteenths. Q. How many eighteenths are there in the stick? A. Eighteen eighteenths.

Q. If two-eighteenths are stuck together how many such pieces can be made from the stick? A. Nine. Q. What will those larger pieces be called? A. Ninths. Q. What part will three eighteenths when put together make? A. One sixth. Q. Six eighteenths together? A. One third. Q. Nine eighteenths together? A. One half. Q. Can an exact fractional part be made by putting four eighteenths together? A. No. Q. Why not? A. While there would be four pieces all of the same length there would be another piece having only two-eighteenths and since the pieces would not all be of the same length no name could be given to them.

Drill in the same way with other pieces such as twentieths, thirtieths, etc. By questioning the pupils lead them to see that to make larger pieces the denominator of the fraction must be divided by some factor of the denominator, that is, by some number that will divide the denominator without a remainder.

Q. Can thirteenths be made into larger fractional pieces? A. No. Q. Why not? A. Because 13 is a prime number and has no factors, that is, no numbers except 1 and 13 will divide it without a remainder, and to put one in a pile does not change the size of the pieces, and to put 13 pieces together makes a whole unit. Thus it will be seen that larger pieces cannot be made when the denominator is a prime number.

Take some fraction which is not in its lowest terms, say  $\frac{12}{18}$ . Q. What kind of pieces can be made from eighteenths? A. Ninths, sixths, thirds, halves. Q. How can those pieces be made? A. By putting together two, three, six or nine eighteenths.

Q. In the fraction  $\frac{12}{18}$  how many pieces have we? A. Twelve. Q. If we put two pieces together how many of the larger pieces will we have? A. Six. Q. What will those larger pieces be called? A. Ninths. Q.  $\frac{12}{18}$  is equal to how many ninths? A. Six ninths. Have this fact expressed thus:  $\frac{12}{18} = \frac{6}{9}$ . In the same way put three pieces together and show that  $\frac{12}{18} = \frac{4}{6}$ , also put six pieces together and show that  $\frac{12}{18} = \frac{2}{3}$ . Arrange thus  $\frac{12}{18} = \frac{6}{9}$ ;  $\frac{12}{18} = \frac{4}{6}$ ;  $\frac{12}{18} = \frac{2}{3}$ . Also thus  $\frac{12}{18} = \frac{2}{3} = \frac{4}{6} = \frac{6}{9}$ . Teach that the numerator and denominator of a fraction are called the terms of a fraction Q. Of the four frac-

tions  $\frac{12}{18}$ ,  $\frac{6}{9}$ ,  $\frac{4}{6}$ ,  $\frac{2}{3}$ , which have been shown to be equal, which fraction has the smallest or lowest numbers for its numerator and denominator, that is for its terms? A.  $\frac{2}{3}$ .

By questioning the pupils lead them to see that to reduce a fraction to its lowest terms the numerator and the denominator must be divided by the largest number that will divide each of them without a remainder, that is by their highest common factor.

At this point teach the meaning and use of the terms factor, measure, or divisor; common factor, common measure, or common divisor; and highest common factor, greatest common measure, or greatest common divisor. I believe the terms, factor, common factor, and the highest common factor are used more than the terms measure, divisor, etc., but it is convenient to know the meaning and use of all those terms, as we find them all used in text books in Arithmetic. Also teach a method of finding the H. C. F. of two or more numbers.

While the rule to reduce fractions to their lowest terms in its simplest form is: "Divide both terms by their H. C. F.," it may be found more convenient to take several steps in the process first dividing both terms by any common factor of the terms and doing the same with the resulting fraction; and continuing until the terms have no common factor.

I have found many pupils who could not reduce such a fraction as  $\frac{47}{138}$  to its lowest terms because they could not find the common factor which is 47 mentally. If they had ever been taught the rule "Divide both terms by their H. C. F.," they had found it so seldom needed that they had forgotten it.

**MULTIPLICATION AND DIVISION OF FRACTIONS.**

First teach how to multiply and divide fractions by whole numbers.

To multiply fractions by whole numbers: Cut two or three apples, either real or imaginary, into, say, eighths. Let one pupil take three pieces. Express on the board thus  $\frac{3}{8}$ . Tell another pupil to take twice as much. If he cannot tell how much to take question as follows: Q. How many pieces did Tom (?) take? A. Three pieces. Q. How many times as much was John (?) to take? A. Two times or twice as much. Q. If Tom takes three pieces and John takes twice as much how many pieces will John take. A. Six pieces. Q. How much has John? A. Six eighths. Place on the board thus: Tom  $\frac{3}{8}$ ; John  $\frac{6}{8}$ . Q. What do we do with any number to make it twice as great? A. Multiply the number by 2.

Q. What has been done with the  $\frac{3}{8}$  to make  $\frac{6}{8}$ ? A. The  $\frac{3}{8}$  has been multiplied by 2 to make  $\frac{6}{8}$ . Express thus:  $\frac{3}{8} \times 2 = \frac{6}{8}$ .

Q. What has been done with the numbers 3, 8 and



2 to get the  $\frac{3}{4}$ ? A. The numerator of the fraction has been multiplied by the whole number and the product has been used as a numerator and the denominator of the fraction has been used as a denominator. Q. How do we know that  $\frac{3}{4}$  is twice as much as  $\frac{3}{8}$ ? A. In  $\frac{3}{8}$  there are twice as many pieces of the same kind or size as in  $\frac{3}{4}$ .

Give plenty of drill on this step before taking up the next step.

Q. If I put two apples of the same size on the table and let Tom take  $\frac{3}{8}$  of one apple, could John get twice as much of the other apple and yet not take any more pieces, that is, since Tom takes three pieces called eighths, can John take three pieces of any kind and have twice as much as Tom? A. This question may be answered by saying John can get twice as much as Tom by taking three pieces each twice as large as Tom's pieces.

If the class cannot answer in some such way simplify by asking Tom to take one piece called an eighth and asking John to take one piece so that he will have twice as much as Tom has. Q. What piece is twice as large as one eighth? A. One quarter.

Q. What fraction is twice as large as  $\frac{3}{8}$ ? A.

$\frac{3}{4}$ . Express thus:  $\frac{3}{8} \times 2 = \frac{3}{4}$ .

Give rule for the last method of multiplying a fraction by a whole number. Rule. "Divide the denominator of the fraction by the whole number for a denominator and use the same numerator for a numerator."

Q. Why does this increase or multiply the value of the fraction? A. The pieces are made larger and the same number of pieces are taken. Lead the pupils to see that the last method is best since it gives the answer in smaller or lower terms, but that it cannot be used when the whole number is not a factor of the denominator of the fraction.

#### QUESTIONS ON SCOTT'S TALISMAN.

M. Winifred McGray, Yarmouth, N. S.

33. Quote De Vaux on Sir Kenneth's dog. What does Theseus (M.N.D.) say of his dogs?

Write a brief history of the career of this wonderful dog of Sir Kenneth.

34. What did Saladin's physician claim to know? Who was he? When did Sir Kenneth find it out? When and how did Richard make the discovery? When did you?

35. On reading Saladin's letter how did Richard propose to reward the generosity of Saladin? On recovering from his illness what reward did Richard offer to his physician? What did the physician reply? What in reality was the reward given Saladin?

36. How did Richard account for the interest in his health manifested by Saladin? How long had Richard



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been ill? Describe the curing of Richard. Who came to look on? How did Richard prepare to receive them? Who had to leave? Who refused to go?

37. How old did the physician say he was. Describe his appearance. Which was Adonbec el Hakim, a physician or a doctor?

Distinguish between these terms:

38. How did the Archbishop of Tyre treat the religious scruples of De Vaux? Give in your own words the Bishop's course of reasoning. How did he feel about the possibility of Saladin's acting with bad faith? What convinced De Vaux and the Bishop, of Saladin's good faith?

39. Describe the Bishop of Tyre. What did Richard think of him? Compare him with the hermit of Engaddi.

40. Account for the friendship existing between the Master of the Templars and Conrade of Monserrat. To which one did the friendship prove disastrous? Which was the greater villain of the two? What became of them?

When the renowned William Ewart Gladstone expressed his judgment on any question the world listened. Mr. Gladstone said that music is one of the most forcible instruments for training, for arousing, for governing the mind and spirit of man.

**THE NEW EDUCATION**

By Frederick H. Spinney.

## III.

The New Education must make school life so attractive that there will be no demand for "compulsory attendance" laws.

Under a compulsory attendance system there is too close a comparison between the school and the jail—with this distinction: you are forced to go to jail if you don't behave yourself; you are forced to go to school whether you behave yourself or not.

Why should school life not be highly attractive? It is the world of the young. That world may be filled with activities of intense interest. The only education that really *educates* involves activities in which the child is keenly interested. At an early age in the child's life the stuffing of the mind with dead facts and figures is an absolute waste of time and energy.

The child's keen interest in one activity will lead to the development of an interest in other closely related activities—until we reach the maximum for his individual capacity.

No healthy child desires to be idle. In fact, enforced idleness is a very distressing form of punishment.

Neither does any healthy child wish to play all the time. Very frequently I have seen children given a choice between play and constructive manual activity and they invariably chose the latter.

Play should be the fundamental factor in a natural programme of a primary school. Much has been said and written regarding play; but it has not yet received the systematic study and attention that its educative value demands. It is one of those branches of the curriculum which is treated as a "side show"—to be attended to if we have any time and energy to spare after our weary labours in the cramming and grinding operations. Subjects thus treated are always neglected.

The new education will give play and manual work foremost places on the daily programme. From sharing these activities with the children, the teacher will ascertain each child's individual interest, inclination and capacity.

Well directed and carefully graded physical activity will stimulate heart and mind and lead to natural self-expression. When we begin to control and direct that self-expression we are entering upon the next stage of the child's education.

A boy who has built a miniature bridge will be interested in the great bridges of the world and the men who share in their design and construction. The life history of such a man will then be of more cultural value than the life history of a dozen imbecile kings. The child must be intensely interested in the PRESENT before he will manifest any interest in the PAST. The past will

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be interesting only when it helps him to understand a present interest.

Thus it will be found that, instead of requiring compulsory attendance laws, we may have one simple remedy for any serious form of misbehaviour, and that will be to deprive the pupil of the privilege of attending this Happy New School for a period of time proportionate to the nature of the offence. This device will add to the attraction of the school; for the child is naturally most eager for those privileges which he is denied.

To make school life attractive will be the leading aim of the NEW SCHOOL.

### A NICE DISTINCTION

It is impossible not to appreciate the resourceful wit of the milliner of whom Tit-Bits tells. A lady selecting a hat asked cautiously:

"Is there anything about these feathers that might bring me into trouble with the Bird Protection Society?"

"Oh, no, madam," said the milliner.

"But did they not belong to some bird?" persisted the lady.

"Well, madam," replied the milliner pleasantly, "these feathers are the feathers of a howl; and the howl, you know, madam, seein' as 'ow fond 'e is of mice, is more of a cat than a bird."—*Youth's Companion*.

## THRIFTY CHILDREN MAKE GOOD CITIZENS

No parents are more solicitous, more indulgent, more anxious to do well by their children than Canadian parents. "Our little ones shall have every opportunity we can give them, if it takes all we have." That is the Canadian attitude. Well intentioned, splendidly human, evergenerous Canadian parent—how often does your attitude breed disaster? How often does it implant in the very fibre of your off-spring that utter disregard of values for which your sacrifices were all made? If a child is not taught to know values how can he possibly appreciate the priceless treasure of your love and care? How can he properly use, if he does not appreciate, the opportunities you place before him? The first value a child should learn is the value of the proper use of money. Through this lesson he will learn other values—the value of self-reliance, self-control, self-respect. He will learn the value of education, citizenship, democracy, freedom. Greatness often has its roots in a penny bank.

## THRIFT OF MONEY MEANS THRIFT OF LIVES

Imagine the inhabitants—men, women and children—of the largest city in your vicinity suddenly and completely wiped out. Suppose that city were Halifax, where between one and two thousand lives were recently lost. Then try to think of six thousand more cities of like size blotted out of existence, and you will have a vague picture of the cost of this war in men killed and permanently disabled by wounds. In the beginning of the war the losses among the Allies were appalling. Why? Because Germany had better means of protecting her troops—better machine guns and more of them, better howitzers and more of them. It was like opposing with a dagger a man armed with a sword. He can reach you first, no matter how brave you are. Let us give our men

not an even chance, but the best chance. Let us see to it that they have in abundance the best means of protection that American ingenuity can devise—the best equipment, better than the Germans'; the best machine guns, better than the Germans', and more of them; the best artillery, better than the Germans', and more of it. They will have it, and only if, through thrift you place the means with which to purchase it at the disposal of your government.

*Official Paper.*

## HOW THE BEAVER BUILDS HIS HOUSE

Beavers not only make dams and canals and ponds; they construct what are called lodges as well, to serve as dwelling-places. These are made by piling up a number of logs, mingled with clods of earth, stones and clay, and digging out the soil from underneath so as to form a sort of hut. These lodges are oven-shaped, and are from twelve to twenty feet or more in diameter, the inside chamber being about seven feet wide. So you see, they have very thick walls. And they are generally entered by at least two underground passages, all of which open in the river bank below the surface of the water, so that the animals can go straight from their lodge into the river without showing themselves above ground at all.

Inside each lodge is a bed of soft warm grasses and wood-chips, on which the animals sleep; and it is said that each beaver has his own bed. At any rate, several animals of various ages live together in each lodge. Then near the lodge these wonderful creatures make a ditch or hole, which is so deep that even in the hardest winter the water in it never freezes quite to the bottom; and in this deep place they pile up a great quantity of logs and branches, so that in winter they may have as much bark as they require to eat.—*Our Dumb Animals.*

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**CANADA'S FEATHERED FRIENDS**

On a frosty morning in the early spring, just after the first brown patches of grass have appeared in the meadows, a joyous, warbling song is heard in the orchard. The singer is easily found—the first glimpse of that blue-back, bluer than the bluest of summer skies, tells you his name—the Bluebird. Then, with a flourish of one or both wings, he settles on a point of vantage and watches the ground below him for insect prey. The sunshine is already warming some of them to life for their careers of destruction, but the Bluebird pounces again and again from his perch, and many insects are removed which, with their numerous progeny, would serve to lay waste and destroy the crops of field and garden.

The Bluebird is but one of an army of migrants to follow. As spring advances they swarm in our shade-trees and hedges, and scatter over field and forest; even in the air they have their hunting ground; and almost without exception they are working in man's interest by holding in check the insect hordes which, if they held undisputed sway, would render man's agricultural efforts of no avail.

When man clears the forest and plants various plants for food he disturbs the complicated series of events known as the balance of nature. The insects often find his exotic vegetation more succulent and attractive than their native hosts, and transfer their attention to this new source of food. Certain of the birds have increased because of these new prairies, which were once forests, and which man has made, and many others find the edges of the man-made fields attractive. We must maintain the bird control of the insect pests as best we can under these conditions. This can be done by protecting the birds which have succeeded in adapting themselves in a measure to man; the birds which come into the garden and orchard and meadow, and find it good and stay there. We can encourage them to come by feeding them in winter and providing suitable nesting-sites so that they will stay with us when we need them most and when they need most insect food; and that is when they are raising their young.

Suitabe shrubbery, such as a few dense tangles of bushes and creepers or a shady hedge, will afford them shelter from their enemies, and if their greatest enemy, the cat, is banished or tethered or otherwise disposed of, they will amply repay us for all our trouble. The damage we suffer from insect pests is enormous; without bothering about giddy figures, it surlices to say that insects destroy from five to twenty-five per cent. of each year's crop of everything man raises. The forest losses, which are even more difficult of computation, must be as great. The birds help to hold these enemies of ours in check; these lovely creatures which we would protect as

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we do flowers for their beauty, and which we all must admire because of their musical ability and cheering presence, are really working for us from dawn to dark, and even through the hours of darkness. How much we owe them! How carefully we should guard them from danger!

And then, when you have studied and known the birds that work for you at home; when you really know the Robin, and Oriole, and Chickadee, and Chipping Sparrow, and a dozen others, you may be tempted to go and see the ones that protect your woods; the shy, retiring birds that avoid the haunts of man and prefer the cool, silent forest; the Hermit Thrush, the Rose-Breasted Grosbeak and the Veery, and very many more. If you once begin to know the birds, they will have a new friend and protector and the grain will not all be theirs. A new pleasure has been added to your experience, new thrills may make your outing an event, and there will be a new motive to draw you from the mundane things of life into God's great out-of-doors, from which one always returns refreshed and rejuvenated to take up the daily task.

When autumn comes, your new-found friends gradually disappear from their accustomed haunts. You will miss them, but others have taken their place. The Chickadees and Creepers now search every nook and twig and

cranny for the hibernating insect or the cluster of insect eggs that would otherwise spell disaster or damage for your shade orchard trees next year. Attract the Chickadee to your house and to your orchard in winter. A piece of suet or a scrap of bacon rind nailed to a tree will keep him working in your immediate neighborhood, and the winter days will seem shorter for his bright and cheering presence. He will appreciate a shelter if you provide one by nailing up a small bird-box or two, and in these he can spend the cold winter nights in safety.

The birds which leave in the fall spend the winter in the United States or even south of them. Your Bluebird and your Robin may spend the winter in Virginia or in California. Therefore both the United States and Canada have agreed by treaty to protect all migratory insectivorous birds, because these birds belong to us both. It is illegal throughout the whole of the United States and Canada to shoot them or harm them or rob them of their nests or eggs. Everyone must help enforce this treaty, and the best beginning is to protect the insectivorous birds in your own garden, on your own farm, or in your own woods. If you see persons shooting insectivorous birds, report them to the nearest game warden, not because you want to cause trouble, but because you believe in protecting the birds which work for us, and are our common property.

If you are a sportsman, you will be glad to know that close seasons of uniform length have been arranged so as to protect the migratory game birds and wild-fowl. Spring shooting of all migratory game birds is forbidden, and they can now make in safety the northward journey to their breeding grounds, there to replenish their numbers. A permanent close season for a number of species such as Wood Ducks, Eider Ducks, Band-tailed Pigeons, Little Browns, Sandhill and Whooping Cranes, Swans, Curlew, and all shore-birds except Woodcock, Wilson Snipe, Black-breasted Plover, Golden Plover, and Greater and Lesser Yellowlegs is now in force, so that these depleted species may increase in number. As a true sportsman, use every influence in your power to assist in the observation and enforcement of the Migratory Birds Convention Act. We need our insectivorous birds to protect our crops and forests, and we need our game so that our children and our children's children will not find that their heritage in wild-life has been destroyed by us. Let us have our health-giving out-door sport, but do not destroy all game. Leave enough so that our descendants, for whom we hold this vast domain in trust, will not lack this incentive to visit the great out-of-doors.

"Canada's Feathered Friends, is one of a series of pamphlets the purpose of which is to familiarize the public with the Migratory Birds Convention Act and to teach Bird Protection.

Further copies may be had by request.

J. B. HARKIN, Commissioner.

Dominion Parks Branch, Dept. of the Interior.

#### SCHOOL AND COLLEGE

##### INTERCOLLEGIATE DEBATE

The debate this year is with St. Francis Xavier and takes place at Antigonish. The subject is:

"Resolved: That if the several autonomous parts of the Empire unite to form an Imperial Federation for the direction of common policy, such autonomous parts shall have an equal voice, rather than one based on proportional representation."

Acadia has the affirmative. In the three five-year series of debates held since 1904 Acadia leads, having won 12 and lost 3.—*Acadia Bulletin, January.*

Lieutenant-Colonel G. W. Mersereau, who was given leave of absence from his duties as school inspector by the Board of Education of New Brunswick about two years ago, to enable him to become Officer Commanding of the 132nd Battalion, which he took overseas, is reported to be on his way back to Canada.

In the intercollegiate debate to be held at Mt. Allison on March 21st, the subject of debate is: "Resolved, that our Dominion Government should nationalize all Canadian railways." U. N. B. has the negative, Mt. A. the affirmative side. The U.N.B. debaters will be Messrs Geo. T. Mitton, Joseph W. Sears, Miles Burpee. For Mt. A., Messrs R. D. Mitton, F. Rowe and W. Guy will do battle.

The Colchester Sun of February 13th gives the names of 83 students of C. class who began work in the Normal College, Truro, N. S., on February 5th. Only two of the number are males.

In the intercollegiate hockey game at Dorchester on February 6th, Mt. Allison defeated Acadia 8 to 4. Again at Wolfville, on February 20th, Mt. A. defeated Acadia 2 to 0. By these victories, says the Sackville Tribune, Mt. A. has reached the enviable position of champion of the Western League in Maritime Intercollegiate hockey.

Chancellor Jones of the University of New Brunswick, who has been ill for a couple of weeks with influenza, is recovering.

Prof. John A. Stiles, of the Civil Engineering staff of the U. N. B., plans to take up Boy Scout work at the close of the present academic year in May next, and will be absent from U. N. B. for a time at least.

##### MT. A. BOY HAD LEG FRACTURED

Gordon Tingley, of Mt. A., who accompanied the hockey team which played against Acadia, met with an accident while in Windsor, which resulted in a fractured leg. He is now in Moncton General Hospital, where he



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Show how this leads to steady industry, and this again, with the exercise of Thrift, provides further funds for Investment—a continuous process leading to Prosperity.



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went to have the bone set. His many friends will be pleased to know that his condition is as encouraging as can be expected under the circumstances. He is under the care of Dr. Calkin.—*The Sackville Tribune*.

Dr. H. S. Bridges, Superintendent of St. John schools, was recently in Fredericton attending a meeting of a committee of the U. N. B.

The question of erecting a new school building at the East end of the town came formally before the School Board at its last meeting.

M. C. Foster, formerly Second Lieut. in the meteorological section of the signal corps of the American army in France, was in Truro on Thursday and Friday, the guest of his brother, W. B. Foster, Louise street. Mr. Foster will spend two weeks in the province after which he goes to New Haven to resume his studies at Yale University.

Principal Cumming, Prof. Trueman, S. J. Moore and S. A. Logan were scheduled to speak at the seed fair at Yarmouth on Monday and Tuesday.

—*Colchester Sun, Truro*.

#### CURRENT ITEMS

It is said that the Belgian Government has decided to maintain Ypres, the scene of several battles between the British and Germans, in its present condition as a permanent memorial of the war.

The London Daily Express says: "The armistice was a mistake. We ought to have finished the war out by a clean march on Berlin. There is still time for that march."

Marshal Foch is said to have made a declaration of a serious character at a meeting of the Supreme War Council, pointing out the danger of rapid demobilization of the Entente forces while the Germans kept ready for war, and might be able to place 3,000,000 men in the field in two month's time. There have been many notable instances of Germany's failure to carry out the terms of the armistice.

At Paris on February 19th M. Clemenceau, Premier of France, and President of the Peace Council, was shot while in his automobile by a man supposed to be a Russian Nihilist. It is said that there was a plot to kill both Premier Clemenceau and President Wilson. The Premier was not dangerously injured.

Sir Wilfrid Laurier was suddenly stricken with paralysis on Sunday morning the 16th of February as he was preparing to go to Mass, and died on the follow-

ing Tuesday. He was given a state funeral on Saturday, February 22nd.

Sir Wilfrid has been for many years the Liberal leader in Canada, and from 1896 to 1911 was Premier of the Dominion. His death removes a striking figure from the political life of Canada. It is said that Parliament will erect a monument to his memory in Ottawa.

A Copenhagen despatch of February 25th states that the official report of the Esthonian authorities on Bolshevik atrocities committed in Esthonia, especially Wesenberg and Dorpat, reveals an appalling narrative of inhuman crime and butchery.

The Nova Scotia Legislature opened on Thursday afternoon the 27th of February.

The Legislature of the Province of New Brunswick will assemble on Thursday, the 6th of March.

The House of Commons opened at Ottawa on Thursday, the 20th February, and adjourned to Monday, 24th, out of respect for the memory of the deceased statesman, Sir Wilfrid Laurier.

The London 'Chronicle' states that a British super-triplane, which will probably be the biggest airplane in existence, is near completion. It was originally intended for bombing purposes but will now be adapted to commercial uses. The machine is driven by six powerful engines under dual control. It will be capable of forty 'hours' flight, at a speed of nearly one hundred miles an hour. A German monster airplane is also announced from Berlin, standing 23 feet high, with wings extending 165 feet from tip to tip, and driven by six motors with a total of 1,800 horsepower. Two of the motors can stop simultaneously without having any effect upon the propellers, except to reduce the speed of the airplane.—*World Wide*.

A new armistice with the Entente powers was signed by the German delegates at Weimar on February 16th. By its terms Germany is obliged to demobilize the greater part of her army, dismantle Heligoland, make Kiel Canal free to the nations, and to restrict her manufacture of war supplies.

#### VEST POCKET THRIFT CARD.

The National War Savings Committee has issued a new vest pocket Thrift Card, 2¾ by 4¾ inches in size. Ladies, golfers, any class of persons, will find this a very convenient means for the carrying of Thrift Stamps, and it is hoped that all persons from the boy or girl up to the millionaire may make use of these cards.

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**HOW TO STUDY YOUR OWN SCHOOL**

Minnie Whitham

If in this period of readjustment a commission should be appointed to study the American home, not the slums nor the aristocracy, but homes like yours, what would you want them to look for? With what spirit would you want them to come? Would you want them to consider: what you are trying to do; what spirit you are trying to breathe into your children; what handicaps there are over which you have no control; whether you are a better homemaker than you were, and whether you are forward looking, patriotic, clear-sighted in facing the big problems that your children must solve in the community, church and school? Then what would be your attitude towards constructive criticism given by this commission? Would you welcome it, study it, understand it, and profit by it, and above all to whom would you want this criticism given, to you or your neighbors?

Your school being but another phase of your children's home life, questions that are good for one are good for the other. Let us then use them as a guide for the study of your own school. Be the kind of a visitor you would want the supposed commission to send to your home. Go with an open mind. Do not expect to find the best or the worst school. There is no best school. In spite of city or village advantages and organization there may be a little unknown teacher in some cross road country school who has a vision and a personality far surpassing anything you possess. When do you visit the school? When Johnny is in trouble? You would not want to be visited just after your clothes line had broken or two of the children had whooping cough keeping you awake nights and with its attendant disorder in household arrangements. Go so often that your coming will pass unnoticed. Takes time? Yes, it does, but some very good stocking darning has been done while mother listened to a reading lesson. She was so much more natural, too, than when she sat up for half an hour with company manners on.

How can you judge the spirit of the school? A pretty good test is the kind of programs put on. Are they for show or do they give many children a chance to take part? Are there single stars or many constellations? Do they "play" or "display?" What spirit do they put into the holidays? What remarks do the children drop casually? If an unfortunate child is reciting what is the unexpressed but instinctively felt spirit of the class towards his mistakes?

So much for spirit! Now, how can you find out what the school is trying to do? Schools have changed since you were a child, the last two years are forcing changes so fast that unless you really try to keep up with them you will be hopelessly lost. Parents and teachers

have been thinking big thoughts; first things are being put first; housekeeping and clothes making are not any more allowed to come before the solution of the problems concerning the bringing up of children. But the question is, "How can I find out what the school is trying to do?"

Call the parents together and ask the principal and teachers to tell you. Meet with open minds. Do not bring in personalities. You want information.

What are your handicaps? Perhaps one is lack of money for high grade teachers and adequate equipment, probably. That is true everywhere. Do you stiffen up when taxes are mentioned? We teachers are probably to blame for some of the antagonistic attitude of citizens towards taxes. We have lauded the Revolutionary Forefathers for refusing "taxation without representation," but somehow we have left the wrong spirit about taxation with representation. Paying taxes should be looked on as a sacrament and not as a penalty. Then you might see if a high-grade, intelligent citizenship is being taught so that when taxes are paid none of the money must go for graft, and that in future thought may be put on just laws of taxation. Call your parents together again to meet with the school board to study financial problems.

Can you tell if your teachers are growing? They have faults of course just as you have but are they weaknesses that time and experience will remedy?

Lastly are you as parents ready to cooperate with the schools in carrying out the program the government is putting into action that our children may be strong physically, sound mentally, reliable morally, to read and speak English fluently and to be master of unexpected situations?—From Parent-Teacher Association Department in *School and Home Education*.

**MANUAL WORK FOR SCHOOL CHILDREN**

The following five paragraphs are five separate extracts from a very readable book "Community Civics," by Field and Nearing. They suggest activities that any strong teacher might introduce. Note, for instance, the fifth paragraph. The teacher, we assume, cannot splice a rope. How interested her boys would be, however, if some rainy day she invited a man to school to teach rope-splicing. The same applies to other things which are outside the teacher's experience. Here are the clippings:

"In one school the boys made a reading table from pieces that were left over in building a house near the school. They stained it a pretty brown, and on it they put many farm journals and other magazines that people, who had already read them, gave to the school. These boys made a rack, too, for filing farm bulletins, and a sand table for the little children. They mended a place in the fence that was broken, and made a cupboard to put the dinner pails away in. The girls did



# War to Peace

## To Solve Canada's Employment Problem

**E**VERYONE in Canada should understand just what the Government is doing to solve the unemployment problems that may arise through the demobilization of our fighting forces.

### (1) Employment Offices.

So that everyone—male or female, soldier or civilian—can get quickly such jobs as are available the Government is co-operating with the Provinces in establishing a chain of Public Employment Offices. Employers are being urged to make use of these offices to secure any help they need. Farmers, for example, who need hired men, should apply to the nearest office. There will be a Public Employment Office in every town of 10,000 people—and wherever the need of one exists. There will be 60 different offices in all—one-half are already in operation.

### (2) Employment Opportunities.

The war held up much work that will now be carried on at once. Public works, shipbuilding, roadbuilding, railway work—construction of bridges, improvement of road-bed, making of new equipment—these will provide new opportunities for employment. In addition, the Government has sent a Trade Mission overseas to secure for Canada a share in the business of providing materials and products required for reconstruction work in Europe. It has also set aside the large sum of \$25,000,000 to be loaned through the Provinces to encourage the building of

workmen's houses. This will mean much new work in the spring.

### (3) Land and Loans for Soldiers.

To help soldiers become farmers the Government has developed a programme that includes the providing of land, the granting of loans, and the training and supervision of those inexperienced in farming. At present, the soldier is granted, free, in addition to his ordinary homestead right, one quarter-section of Dominion lands. He also receives a loan up to the maximum of \$2,500.

These original plans are now being broadened. If Parliament passes the new proposals during this session, the Soldier Settlement Board will be able to buy suitable land and re-sell it to the soldier at cost.

Land up to the value of \$5,000 may be bought by this plan—the money to be repaid in 20 years. The low interest rate of 5 per cent. will be charged. These new proposals will also permit the soldier Settlement Board to loan the soldier-farmer up to \$2,500 for purchasing equipment, etc., in addition to \$5,000 loan on his farm.



## The Repatriation Committee

OTTAWA

their part, too. They stenciled and hemstitched sash curtains for the windows. They stretched dark green burlap in one corner on the wall on which the best school work could be mounted. They drew each month a pretty calendar on the blackboard."

"In one country school a girl read in a farm paper on the reading table how to make a fireless cooker. She took a box, some hay, and some muslin, and made one according to directions. In this the school often cooked rice for the hot lunch."

"Part of a child's education comes from the study of books; part of it comes through doing things; and another large part comes through being a member of the school family."

"The school exists to train better farmers, better homemakers, and better citizens. The things a boy or girl does at home, if done in the right way, are quite as much apart of his or her education as the things done at school. Because of this, many of the country schools are now giving credit for home work—for milking the cows, washing the dishes, getting the meals, ploughing a field—if it is well done. From this same idea grows the movement of boys' and girls' clubs."

"On one farm the hay rope broke in the midst of the haying. Just then the farmer's son came into the barn and said: "I can splice the rope in a few minutes so it will be as good as new. I learned how at school last week." That farmer now believes in his school more than ever before.—*In Rural Science Bulletin (N.S.)*

#### WHERE'S MOTHER.

Bursting in from school or play,  
This is what the children say,  
Trooping, crowding, big and small,  
On the threshold, in the hall—  
Joining in the constant cry,  
Ever as the days go by:  
"Where's Mother?"

From the weary bed of pain  
This same question comes again;  
From the girl with sparkling eyes,  
Bearing home her earliest prize;  
From the bronzed and bearded son,  
Perils past and honours won:  
"Where's Mother?"

Burdened with a lonely task,  
One day we may vainly ask,  
For the comfort of her face,  
For the rest of her embrace;  
Let us love her while we may.  
Well for us that we can say,  
"Where's Mother?"

*New Zealand School Journal.*

#### ON A BALKAN SUNSET

(To My Wife)

By O. D. A. Stevenson

Along the line of mountain walls  
The western sky with colour glows,  
While all around the twilight falls  
In loveliest tints of gold and rose.

But, though the sun no more is here,  
His light still lives; for, bright and high,  
The silver moon swings calm and clear,  
Soft shining in the eastern sky.

A lesson sweet for lonely hearts—  
The sun's light in the bright moon lies!  
So, distance lovers only parts—  
Love, like the sunlight, never dies!

—*In the Canadian Magazine for February*

#### AN ANSWER

By J. E. Hogg

Rest now in peace, ye Flanders dead,  
With each a cross to mark his bed  
Where poppies grow.

The boastful Hun

Who thought by might of sword and gun  
To win the world, his quest has fled.  
Ye noble dead,  
The fight ye led is won,  
And peace is round us shed.  
We live and love because ye bled  
"In Flanders fields."

Your cause has triumphed 'gainst the foe,  
To us in vain ye did not throw  
The torch;  
With pride we hold it high,  
And freedom's light shall never die.  
Sleep then in peace,  
Where poppies blow,  
"In Flanders fields."

—*In the Canadian Magazine for February*

#### SUPERINTENDENT MAXWELL'S FINAL ADVICE

"In leaving my active work I would say to you: Do not attempt to lay down hard and fast directions which teachers under your supervision must follow. Be content to be leaders, not dictators. The first duty of a superintendent or a principal is to furnish his full share of inspiration and suggestion to his corps of teachers. His second great duty is to call forth all the inspiration, all the invention, all the originality, all the power that each teacher possesses. When he has had any marked degree of success along these lines, he will have performed his duty fully."

He also gives this final message to teachers, which may be studied carefully:

"1. Keep yourself fresh for your work, by constantly reading, not merely books on teaching, but the great literature of the world. Always remember and apply in your reading, however, the weighty advice which Edmund Burke gave his son. 'Reading', he said, 'and much reading is good. But the power of diversifying the matter infinitely in your own mind, and of applying it to every occasion that arises, is far better; so don't suppress the *vivida vis*.'

"2. Make special preparation for every lesson which you give your class. Always speak from a full mind. What the aim of the teacher should be in preparing herself for conducting a class recitation cannot be better stated than it once was by the late Superintendent Howland: "To secure this close, untiring attention (of the pupils)—the first essential of a successful recitation—there must be in the mind of the teacher a clear and well defined conception of what is to be done, the points to be gained and the conclusions to be reached, so that ambition may not be dulled and curiosity extinguished by misdirected effort and fruitless endeavour. The truth as yet ungrasped should be placed so temptingly near that indifference to its possession shall be an impossibility and earnest exertion a delight."

"3. Where you find it necessary or desirable to engender and cultivate good intellectual habits, do so by

daily practice with your pupils, from the beginning of the term to the close. Do not repose in the idle belief that a good habit, say of memorizing good literature or pursuing a correct method of solving mathematical problems, can be acquired in a few days' or a few weeks' work at the beginning, the middle, or the close of a term

"4. Always remember that gentleness is the most valuable quality in a teacher. If you cannot lead children to perform desired tasks and acquire the necessary habits by gentle means, you cannot be a good teacher."

*The School Bulletin.*

"O God of Bethel by whose Hand," was King Edward's favorite hymn. It was sung over the grave of the great David Livingstone in Westminster Abbey.

The tremolo that some young ladies affect when singing is called by one gentleman "the cinematographic vocal wobble."

**SUBSCRIBE NOW FOR THE  
"EDUCATIONAL REVIEW"**

**N. B. OFFICIAL NOTICE**

The Board of Education has given authorization to teachers and pupils of the public schools, to co-operate with the National War Savings Committee in the sale of Thrift Stamps and in such propaganda work as may be outlined by that Committee.

A War Book, showing the importance and need of saving, has been sent out to the teachers and pupils, who are earnestly requested to do their utmost to promote the aims of the Committee.

Teachers are requested to carefully read the introduction. It will there be noted that the war book is a text book and some time must be given to it each school day. Thrift Stamps are not for children only, but for every man and woman in the community who can be induced to buy them.


Teachers and pupils can render great service by making known the contents of the War Book to all.

Teachers may act as treasurers for the money contributed for Stamps, and it is expected, will purchase them for any who may desire them to do so.

W. S. CARTER,

Chief Superintendent of Education.

Education Office, Fredericton, N. B.,  
Dec. 26th, 1918.



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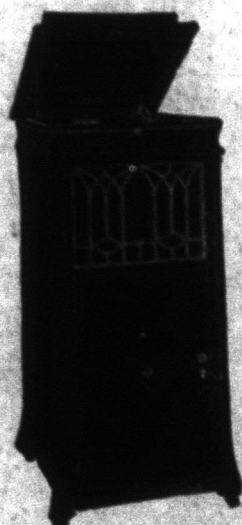
**OFFICIAL NOTICE**

**New Brunswick School Calendar**

1918 — 1919

1919 SECOND TERM

- Apr. 17—Schools close for Easter Holidays.
- Apr. 23—Schools re-open after Easter.
- May 19—Observed as Loyalist Day in St. John Schools only
- May 23—Empire Day.
- May 24—Last day on which Inspectors are authorized to receive applications for July Examinations.
- May 26—Observed as Victoria Day. (School Holiday).
- May 27—Class III License Examinations begin (French Dept).
- June 3—King's Birthday. (Public Holiday).
- June 6—Normal School closes.
- June 10—License Examinations begin.
- June 16—High School Entrance Examinations begin.
- June 27—Public Schools close.



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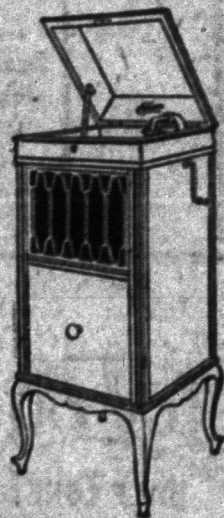
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