

The Western School Journal

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TORONTO, Ont.



A HYMN OF EMPIRE

Lord, by whose might the Heavens stand,
The source from whom they came,
Who holdeth nations in Thy hand,
And call'st the stars by name,
Thine ageless forces do not cease
To mould us as of yore—
The chiselling of the arts of peace,
The anvil strokes of war.

Great God, uphold us in our task,
Keep firm and clear our rule,
Silence the honeyed words which mask
The wisdom of the fool.
The pillars of the world are Thine;
Pour down Thy bounteous grace,
And make illustrious and divine
The sceptre of our race.

—*Frederick George Scott*

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Contents for March, 1915

The Favorites

We are frequently asked for a list of the best books to be read to School Children in the different grades. We asked a member of the Normal School Staff, Winnipeg, to compile a list for us, which she has done. We will publish it later for general distribution. In the interval we publish this month a short selection of the greatest favorites from her list. If the books are desired by post add 5 to 10c extra for postages.

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The Western School Journal

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VOL. X

WINNIPEG, MARCH, 1915

No. 3

Editorial

Calling Names

It is a poor type of man that can climb only by pulling others down. He is the lowest of his type if he resorts to misrepresentation in order to gain his ends. One of the most common and most dangerous forms of misrepresentation is exaggeration. Here are two quotations illustrating this tendency to exaggerate. The names of the writers are out of pity withheld:

(1) "Year in and year out the educators of the country, with the assent of the parents, force the children to go to school and acquire arithmetic and adenoids; history and hookworm; algebra and astigmatism; cube-root and consumption; Caesar and spinal curvature; and then ninety-seven out of every one hundred of them go forth into life unable to apply their so-called education to the immediate problem of making a living—a problem that immediately confronts that number."

(2) "We are content to hang the alphabet and multiplication table around the child's neck and then send the poor thing out to educate itself."

It is somewhat strange that the writers quoted belong to one nation, but it is not to be inferred that the nation is responsible for the utterances. As a matter of fact, the nation can be only indirectly responsible. There is a stage in every man's development when he finds it easy to adopt the dictatorial and fault-finding method of speech and writing. Some people never get beyond this stage. And nations are somewhat like individuals. During the formative

stage they adopt the sensational form of expression. Give them time. They will moderate their judgments and their expressions as they grow older and will judge more sanely and dispassionately.

As a matter of fact, things are not all wrong with the schools. These writers have probably not been in schools half a dozen times in twenty years. They have, through reading and through feeling the pulse of the times, learned what the modern school is doing, and then comparing this with the practices of the old-time school, have begun to rail and storm—as if the reality today were the school of their childhood, and as if the world were asleep during their long snooze of twenty years. Fortunately, we know enough to give the opinions of a Rip Van Winkle their true value.

Now everybody knows that the schools of today are far from perfect. Perhaps, however, as institutions they are better than the average of the other institutions of civilization, such as homes, churches, courts and legislatures. In any case, improvement in their condition is not so likely to result from fault-finding and rank overstatement as from friendly encouragement and frank recognition of praiseworthy efforts at improvement. And so, instead of the glaringly uncharitable expressions just quoted, it would be more to the point to refer to the best we have and say something like this:

(1) Children who attend our elementary schools are too young to receive di-

rect preparation for life's activities, but they receive in ninety-seven out of one hundred cases something that is of more value than direct training, namely a right attitude to work and a stock of virtues and habits that are essential to success in every department of life. Thus we have character and conduct, system and self-sacrifice, life and liberty, co-operation and charity."

(2) "Children at school learn to read and write. This does not give them an

education but it puts them in a position and receive an education. Reading and writing are the means to thought-getting and thought-giving. People were not so hopelessly wrong when they emphasized the importance of the three R's."

In last issue the article on School Gardening was credited to E. Mihaychuk, instead of W. J. Mihaychuk.

Tempered

By Susan Coolidge

When stern occasion calls for war,
And the trumpets shrill and peal,
Forges and armories ring all day
With the fierce clash of steel.
The blades are heated in the flame,
And cooled in icy flood,
And beaten hard and beaten well,
To make them firm and pliable,
Their edge and temper good;
Then tough and sharp with discipline,
They win the fight for fighting men.

When God's occasions call for men,
His chosen souls He takes,
In life's hot fire He tempers them,
With tears He cools and slakes;
With many a heavy, grievous stroke
He beats them to an edge,
And tests and tries, again, again,
Till the hard will is fused, and pain
Becomes high privilege;
Then strong and quickened through and through,
They ready are His work to do.

Like an on-rushing, furious host
The tide of need and sin.
Unless the blades shall tempered be,
They have no chance to win;
God trusts to no untested sword
When He goes forth to war;
Only the souls that, beaten long
On pain's great anvil, have grown strong,
His chosen weapons are.
Ah, souls! on pain's great anvil laid,
Remember this, nor be afraid!

—From "The Congregationalist."

Special Articles

DRAWING, DESIGN AND CONSTRUCTION

Lesson VII. A Series of Normal Art Lessons for Teachers.
By BONNIE E. SNOW, formerly Supervisor of Art in Minneapolis, Minn.

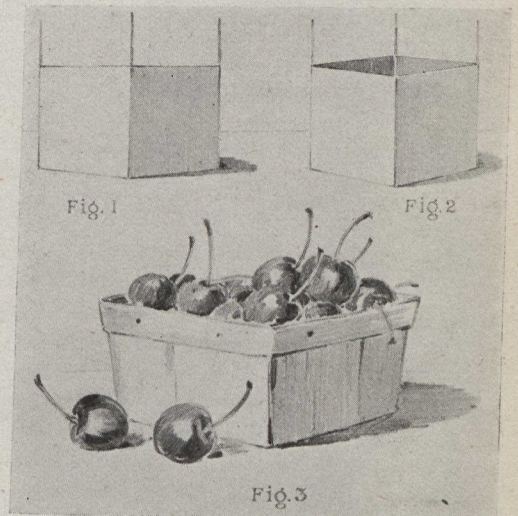
The Perspective of Turned Rectangular Objects

Perspective is a science, and not an art. Like other scientific subjects, its principles are definite and results from its practice can be judged by absolute standards. A perspective drawing, aside from any consideration of artistic merit, is either right, or it is wrong. An error can be located and corrected, as definitely as an error in spelling. A thorough knowledge of the few fundamental principles of perspective is of immense advantage to one who wishes to learn to sketch rapidly and accurately from common objects. Hence we employ many devices in our effort to present the subject so that children in the grammar grades will understand and use it. Some teachers use with great success the device of a pane of window glass and a "grease" crayon. (Lithographers' Crayons are excellent for this purpose, as they contain a large amount of tallow.) Where this is done in class, one pupil holds the model and another holds an upright pane of glass in his left hand and sketches on the glass the outlines of the model. When accurately done, this "proves" perspective principles, such as foreshortening, direction of receding edges, etc. Students are often interested in sketching on the window-pane outlines of houses, sheds and roofs, using a small brush and the opaque white solution known as Temperine. This may be washed off the window, when dry, with soap and water.

The most convenient device for classroom practice, however, is the cubical box made of paper, described in our last lesson. Every pupil should make his own box, and all models should be

exactly alike. This simplifies matters for the teacher.

We learned in Lesson VI. that all horizontal faces when seen at an angle appear foreshortened. We also learned that horizontal, receding edges, when seen below the level of the eye, appear to slant up; when seen above the level of the eye, they seem to slant down. In other words, horizontal, receding edges are always apparently seeking the eye level. The objects



studied in Lesson VII. were directly in front of the observer; they were seen in what is termed "Parallel" perspective—that is, certain systems of their horizontal edges were parallel with the observer's horizon. In such cases, but one vanishing point is used, because there is only one system of horizontal lines that appears to converge and "vanish" in a common point. When a rectangular object is turned at an angle to the observer, however, there is no system of its horizontal edges that

is parallel to the observer's horizon. In Fig. 1, which represents the cubical box turned at an angle of forty-five degrees, there are seen three systems of lines—a vertical system, in which the lines do not appear to change their direction, a

Let us suppose that the cubical box, with the toothpick "posts," is in the hands of the students. Our lesson would be conducted something like this: "Hold your box level, and turned at forty-five degrees (that is, with

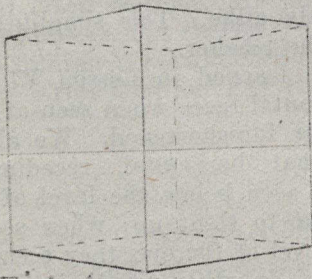


Fig. 4

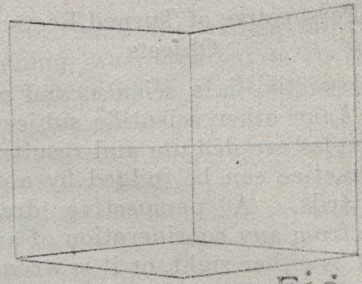


Fig. 5

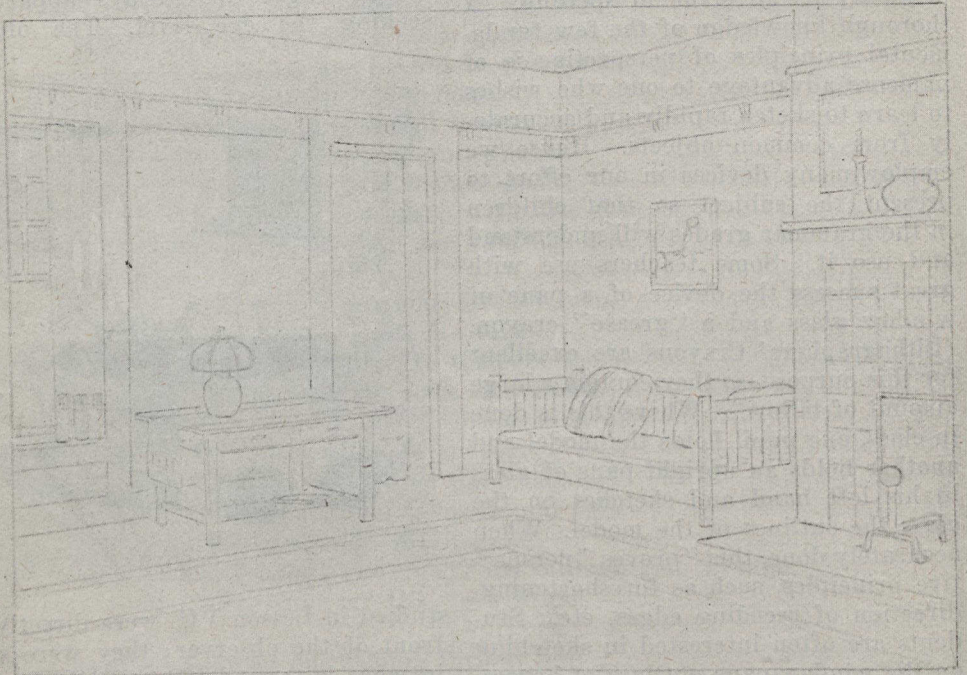


Fig. 6

horizontal system receding and converging toward the right; and another horizontal system receding and converging toward the left. In this drawing, therefore, two vanishing points were used, both of them located on the line of the observer's horizon.

one corner directly in front of you, so that both sides are turned equally away) and so that the top edges of the box are on a level with your eye. In this position what is the appearance of the top of the box? (The entire top appears as a horizontal line.) What is

the relative appearance of the toothpicks? (The nearer toothpick hides the farther one, so that only three appear; and one of these three, the middle one, looks a little longer than the others.) What is the appearance of the two retreating edges at the bottom? (They appear to slant up, slightly.) If the top of the box appears as a horizontal

The student should now sketch in outline the box in the position thus analyzed (Fig. 1). The only point that is not settled by this analysis is the foreshortened width of the sides of the box. In freehand perspective, this is generally determined by pencil measurement, or by the eye. A drawing in perspective must always LOOK right.



Fig. 7

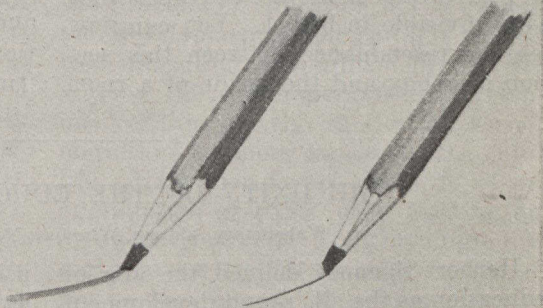


Fig. 8

Fig. 9

line, and the two edges at the bottom of the box appear to slant up, what effect will this have on the vertical edges of the box? (The right and left verticals appear shorter than the middle vertical.)

In Fig. 2, the box is still held at forty-five degrees, but is slightly lowered. Two more edges come into view, and all four edges now seem to converge. We have now two systems of converging lines, with three lines in

each system. One system or group seeks its vanishing point on the horizon line to the left of the observer, and the other seeks its vanishing point on the horizon line at the right of the observer. In drawing from the box in this position, a horizontal line should be sketched on the paper or blackboard to represent the horizon. The nearer vertical edge should then be sketched so that the top of this line is about two inches below the horizon line. Vanishing points should next be located, and the two groups of receding lines drawn to meet these points. Such work, which is diagrammatic and must be accurate, may be done with a ruler.

Another position of the paper cube is indicated in Fig. 4. The angle at which it is held is still forty-five, and the level of the eye is indicated by the horizontal line marked H.L. All parallel retreating edges seen below the eye level appear to slant up, and all parallel horizontal edges seen above the eye level seem to slant down. These lines still seek vanishing points on the horizon line at the right and left of the observer.

If we cut from our paper box two adjacent sides, and then hold what is left of the box in the position indicated in Fig. 5, we shall see the lines that were invisible in Fig. 4. You can now see the resemblance between this section of a box and the inside of a room

(Fig. 6). When you draw floor and ceiling lines, you are really drawing lines that resemble in direction the dotted lines in Fig. 4.

Pupils who have progressed thus far in the study of perspective, can vary the monotony of their close application to the principles and sketch from interesting subjects like Fig. 3 and Fig. 7. To obtain the best effects in pencil sketching, choose white or cream paper of comparatively smooth surface. Select a soft lead pencil (the Prang S or SM), sharpening the pencil to a rather blunt point and rubbing down the lead on practice paper until a flat face is secured. This will give the broad gray line illustrated in Fig. 8. When sharp, crisp accents are desired, the pencil may be turned, as in Fig. 9.

Notice how the pencil is used to express the various timbers in the construction of the old shed (Fig. 7). Sometimes the direction of the stroke follows the grain of the wood, and sometimes it follows the perspective direction of the enclosing lines, as in the treatment of the windows in the old building. Very few tones are necessary in the production of this sketch, but these tones are evenly laid on, and any variation is carefully thought out and accurately placed. These variations are illustrated in the windows, "under-cuts" and chimney.

THE UNITY OF THE EDUCATIONAL PROCESS

Valedictory Address, Winnipeg Normal School, Dec. 18, 1914

Herbert Spencer defined the aim of education as the all 'round development of the individual: on close examination, however, we see that this is not so much the aim as it is the problem of education. What is an all 'round development? The very idea of development involves social relations, and the whole process has to be determined in accordance with these social relations. Education is really the continual enrichment of the resources of the individual: hence

it is of as much importance to the adult as to the child. Education, therefore, is never finished, but is a life-long process and includes the physical, intellectual and moral phases of the life of the individual. The phrase—"social efficiency," as the aim of education—has become so hackneyed that it has lost much of its real content, and on that account, I prefer the definition given by Prof. Owens: "The school is an agency which society organizes to socialize its mem-

bers." In brief, the whole educational process is a social one, i.e., a process which helps to an appreciation of social values.

Spencer also stated that "education is a preparation for complete living." This is open to serious objection, viz.: it seems to imply that education is looking forward to something that is to come. Of course it does, but any education that looks forward to the future only and has that as its aim, is not true education. That is training, not education. Education must be conceived in terms of personality, and has a relation to the life that now is as well as life in the future. The idea should be to enable the child to live effectively where he now is. The other is a cold-storage idea or theory of education—loading the child up with stuff which he is expected to use in the future. Happily this theory is rapidly passing away, and is being supplanted by the idea of fitting the child to live the more abundant life to-day. You can't prepare a child to act in the future unless you help and prepare him to act now. Personality implies self knowledge and self-control, or more definitely the ability to think one's self in relation to one's world; the ability to set ends before one's self as desirable and freely choose them as one's own. Education is intended to assist the child to realize himself as a person; and we are persons only through acts of self-discrimination, self-criticism and choices that are strictly our own.

Moreover, in education we have to do with life, and not simply with things or mere subject matter. We sometimes say—"I teach John Geography"—placing emphasis on the last word, instead of upon the word "John." It is a living organism with which we have to deal, and it grows only by assimilating food—mental as well as material. Education, then, since it has to do with the growth of living beings cannot be any mere mechanical compulsion; any mere moulding of material; any mere heaping up or storing of anything whatso-

ever. Its type must be feeding, not pushing and pulling. It succeeds only as external material is transformed into living tissue, and the act of transformation must be performed by the organism itself. Education is not a mechanical, but a vital process. It is more than mere instruction. Development rather than mere instruction is the central idea in education. Instruction has reference to the intellect, or function of knowing; while education has reference to the whole living being. Development is also more than mere growth. Growth signifies increase in size or strength; while development includes the further notion of qualitative change. Development is from within—modern education recognizes the inner life as the essential life of man. It proclaims that things are not life, and that nothing can enlarge us that does not become a part of our inner being. The school is not to hang something on the child; but to develop something within him. It is not what comes to a child from the outside, but what comes up out of the inner being, that is the decisive fact of life.

It is evident, therefore, that the tendency in modern education is to lay emphasis on the child himself. And, if the problem of education is the growth and development of the child, it follows that education is a unified process involving the contemporaneous development of the physical, intellectual, social, moral and religious aspects of the child life. Education is not made up of an aggregation of parts, each existing on its own account; but is like a single life that realizes itself in the co-operation of the various organs of a human body. The child himself is a unit, and not a bundle of faculties—intellect, will, heart, etc. The idea of education, accordingly, is not that the child acquires first one thing, then another, but that he is first one thing and then develops into something different. The whole child goes to school. He grows or should grow continually in moral and physical as well as in intellectual life—these three aspects of life are regarded as in-

separable. The physical body must be developed and trained. Consider the value of personal health and vigor to society. What is the value of a weakling in an army corps on the European battlefields today? Even so in our community life: if we are weak and unhealthy, we are debtors to the community, since we are unable to co-operate fully with the other members of the social group in the work of the community. The possibilities of organized play and physical training for moral and religious uplift can scarcely be over-estimated. The intellectual development depends largely on the physical condition of the student. And in regard to moral training: it is impossible to give this apart from some other kind of training, as one can give physical training alone. The moral life is tied up with the physical and intellectual and therefore moral education must be carried on in conjunction with the whole process of education.

In conclusion, while we may all go out from this Normal School firmly convinced of the truth and value of such a conception of education, that alone will avail little unless we also remember that the position of the teacher is one of mighty influence in the building up of

a better and nobler type of life in this great Dominion of ours. It is not how many years we have been about it; but what experience have we pressed into it. It is not the number of years' service we give, but the quality of those years that counts in the great task. "The greatest teacher who ever lived on this earth, in one-third of a century drained the cup of earth life; while Methuselah, with his traditional ten centuries, appears merely to have tasted of it. A glance into history or biography, a glance at the men and women now around us, discloses the immense difference in the quality of life, in the content of a month, of a year. In some, the moment is almost over-freighted with thought and emotion and action, with experience in its richest and fullest terms, a casket of brilliant and many-colored gems; in others, the moment is so thin and shudderingly bare, such a pallid blot of grayness against a desert of gray nothingness, that souls alive with the red wine of life hardly, or at best with something of a missionary effort, discern their anaemic brother." I ask you, fellow-students, as I ask myself today—Which of these types do you want to be?

THE SECOND READER

Only a few of the selections in the Second Reader will be touched upon in this issue. The method already given will apply to most of the lessons. In next issue the Third Reader will be considered.

Bird Thoughts.

An introductory talk will reveal knowledge of children as to hatching and early life of the birds. This may be taken long before the lesson is studied in class. Then comes the study of the four pictures and the oral reading. The after work may be very varied and may relate to the growing experiences of animals, plants, children—or, indeed, it may foreshadow

many talks on evolution—such as (1) implements, (2) remedies, (3) schools, (4) modes of lighting. Discussions of this nature are interesting and instructive and though they have little to do with this reading lesson, may begin right here as a form of school work which will continue throughout the grades.

Hiawatha.

The main features of Longfellow's poem should be known to children. It can be read aloud to them in sections, and some of the most suitable selections should be memorized. Postcard illustrations will be of great value. Most of the children will be able to add some-

thing from their experience, and some of them may be able to furnish Indian curios. As seat work there will be making of baskets, canoes and other articles readily suggested. The materials of the neighborhood are best—birchbark, willow twigs, moss, nuts, etc. Naturally there will be much nature study, e.g., study of the birds and their songs, the animals and their habits, the sowing of the corn. There is scarcely a form of handwork or of experimentation that cannot be employed in dealing with this topic. If it be true that the child in his experience follows the history of the race, then the study of Indian life is his right. Closely related to this study is the reading of Miss Dopp's works on primitive life—The Tree Dwellers, The Cave Dwellers, etc.

The Mouse and the Lion.

A typical fable. It needs no introduction. After the pictures are seen clearly and the lesson to read, there is room for application to life and for study or invention of parallel stories. Such stories are the foundation of useful work in composition.

Where They Grow.

A fine study in picture making. The expression of pupils should be the measure of their appreciation. Let them feel this. Let them add other pictures even if they cannot give a poetical setting. Remember the general thought that each lesson should be a centre of study and that it should be more than a reading lesson. Naturally this particular lesson will be memorized as a result of study—and not because of set effort to memorize.

The Potato.

This lesson suggests many others. The teacher will make a selection of types of plants that should receive study during the term and follow a plan. Her course of instruction will of course take in more plants. Here is a suggestive list:

(1) Plants—wheat, potato, cabbage, lily, rose, pansy.

(2) Animals—dog, horse, cow, squirrel, bear.

(3) Birds—prairie chicken, duck, sparrow, robin.

(4) People—carpenter, farmer, fisherman, doctor, inventor, soldier.

(5) Countries—Greenland, Japan, India.

This list may be indefinitely extended. School should mean growth in knowledge and in experience. Nothing is better than lessons that reveal to pupils the great world outside. This has very little to do with teaching the lesson on the potato; but all that is implied in the lesson is of more importance than the lesson itself. The very next lesson is a good illustration of the method of dealing with one of the suggested studies.

The Swing.

Teachers will do well to find other little poems of like nature. Parallel studies are always profitable. As a result of the study of this lesson one teacher had her pupils persuade trustees to erect a swing on the school ground. This was the beginning of a movement looking towards a properly-equipped play-ground in which sand pile, horizontal bar, basket-ball and the rest were all provided. What one teacher has done others can accomplish.

The Dandelion.

These lessons are excellent as reading lessons in that children have an opportunity to get clearly defined pictures, and good opportunity for expression. In addition, these lessons can pave the way for the study of the dandelion and of noxious weeds generally.

The Caterpillar.

Here is a series of lessons that should be introduced by a study of the actual objects. Children can collect cocoons, can put them in proper cases and watch for the day when the moths will escape. Then they can collect eggs and watch while the hatching goes on. The feeding of the young caterpillars will be a delightful occupation. By careful guid-

ance the pupils may learn much of value with regard to insect pests, may learn the meaning of spraying plants and trees, and even may go a step farther and consider the relation of insects to the health and comfort of animals and people. A reading lesson should be more than a reading lesson. It should be a suggestion for excursions into many fields of thought and action.

The Foolish Pine Tree.

Here is a lesson which leads to the study of trees; which leads to a talk about Christmas; which emphasizes the value of contentment. Incidentally it will pave the way for the reading of all the nature stories so beautifully written by various writers—such as Andersen, Dickens, Mrs. Gatty, Kipling, Roberts, Long. This is the time when children should get an introduction to such stories. Such stories are their birth-right.

The Acorn.

This story paves the way for a study of lumbering and the related occupations of building, carpentering, cabinet-

making. As a reading lesson this story is good; as a suggestion for further study it is even better. Pupils can select other objects as a foundation for similar study—e.g., a piece of coal, a bit of iron, a bit of wool.

How They Run.

This is a comparative study. It can be read in dialogue form or dramatized. Parallel stories can be invented, e.g., How they fly, How they sing. The lesson and others of the kind should lead the child to sympathize with the larger world. Such broadening of sympathy is education. Everything is education which enriches thought and feeling and which develops capacity for action. A child may go through a reader without feeling a single thrill of joy, or he may be thrilled by the novelty of the thought, the beauty of expression, or the suggestion for action. The one question for the teacher all through is this, "Does the study quicken life, or prompt to service? That after all is the great question in all teaching.

PUBLIC SCHOOL MUSIC

By A. W.

I have a suspicion that the majority of your readers will turn away from this subject, not exactly as unworthy their attention, but because it is looked upon as an extra, a special subject, one not demanding the attention of the regular grade teacher in either the Elementary or Secondary schools.

Music is admitted into the schools of Manitoba probably because it is considered to be the right and proper thing to do; not from any profound conviction to that effect, though it may be admitted that there are many earnest believers who really demand it as essential to a broad and generous education.

The great mass of inspectors, teachers and trustee boards, I imagine, view with benevolent toleration the presence

of music as a school subject and on occasion "damn it with faint praise."

If one may judge from appearances, from the attention given the subject in Canadian School Journals, in Canadian Normal Schools, in the Teachers' Conventions, school music is in a poor way throughout Canada. There appears to be no evidence on hand that the subject is being grappled with seriously. True, fairly good work is reported to be done in some of the cities, but even the best cannot compare with the quality of the work being done in, say, the English schools.

Before any marked improvement can be made, there can be no question as to the necessity of a genuine conviction of its merits as a subject in every elemen-

tary and high school. Is it true, as an American writer says, that "Music has become a necessity to man in his daily life," or as one of their university presidents said of the part that music plays in social, civic and religious life—"a sweeping force in civilization?" Are these sentiments really true? I am inclined to think they are. I am very much inclined to agree with an eminent English educationist, T. Maskell Hardy, when he says: "In the education of a child there should be far higher and nobler aims than that of merely fitting and preparing him for the acquisition of wealth, which after all is not the highest nor the best of life's goals. The newer spirit in education not only occupies itself in imparting knowledge, cultivating the intellect and forming the character, but concerns itself also with the preparation of children for the enjoyment of that fuller and higher life which is the prerogative not of the wealthy, but of the cultured. Hence we find now-a-days that in all educational schemes increasing attention is devoted to such subjects as music, art and nature-study,—subjects which, while of no immediate pecuniary or practical value to a child, broaden his outlook, call into play new instincts and emotions, develop new channels for self-expression, open up to him a new world of beneficial activities and innocent pleasures, and thus play a part of incalculable importance in the subtle process of character formation.

"It is no exaggeration to assert that children, when singing good music under the direction of a skilful teacher, are elevated to a higher plane of spiritual emotion than on any other occasion.

"The high aesthetic value of music, its ennobling and elevating influence upon the mind, its power in purifying the emotions and raising instincts which would, but for it, lie dormant, have been at all times so universally acknowledged that it seems almost incredible that a subject of such extraordinary

scope and power could ever have been omitted from the curriculum of any school, primary or advanced."

Of all the subjects that appeal to the higher emotions, that develop those deeper, richer qualities of life, none is so well adapted to school conditions as music. It does not mean a stupendous outlay of money, or time, or effort, it does not require experts to teach it, it simply means that our teachers be qualified by adequate training to teach this, just as they are trained for any other subject.

If reasonably well taught it always gives pleasure as well as profit to the children, it receives the approval of the community and is welcomed in the home.

With the educational authorities only half enthusiastic our teachers are given an opportunity to get the training that is absolutely necessary to securing even reasonably satisfactory results. At present it may even be a question whether the harm to children's voices, due to ignorance, does not exceed the good that comes from music as at present indulged in. Children's voices are delicate and the strain that comes from loud, unrestrained singing of those who are eager to sing, undoubtedly does serious injury to many voices. Sufficient instruction in the care of the voice should surely be given to insure that voices will be at least not injured. The more musical the pupil is the more he loves to sing, and the very vigor he puts into his singing makes him the more apt to suffer injury to his voice. With teachers, and leaders of all classes and description, urging children to "sing out," and with the habit of valuing singing apparently in proportion to its volume, is not to be wondered at if comparatively few voices that are worth while are preserved sound beyond the learning process. Fortunately many children are timid and develop late, so they do not get lured into the danger

and their voices are preserved sweet and sound to the end of their school days, but often undeveloped.

This is a plea not for more time, or more emphasis to be put on music in

the school, but that the teaching be more efficiently done, and to this end that more thorough training be given to teachers before they enter upon their work in the schools.

SCIENCE IN OUR HIGH SCHOOLS AND COLLEGIATE INSTITUTES

By J. S. LITTLE, M.A., B.Sc., Kelvin Technical High School

Having read the report of the "Committee on the High School Curriculum," and knowing that that committee is desirous of hearing any well-intentioned criticism, I have sent the following statement of my views on the Science Curriculum to Mr. Lang. Before repeating my letter, I should like to express my appreciation of the splendid work that has been and is being done in the province by the science teachers, under what I humbly consider not too favorable conditions. If my remarks may appear of the imperative order, please do not consider them in the nature of command, but in the light of convictions expressed as firmly as religious tenets. Should my views thus expressed be the means of creating discussion at this important time, I shall feel honored and greatly repaid.

Lord Avebury once said, "Education does not depend on pouring in knowledge but in drawing out the faculties and strengthening the character." Spencer, Huxley and others have convinced us of the value of induction, and yet have we, science teachers, not acted contrary to our convictions on numerous occasions. We think too much about the information we impart, and too little about the method by which we impart it. Unintentionally, we stifle curiosity, strangle natural gifts, and quench the thirst for discovery. Allow me, therefore, to confine my cursory remarks

- (1) To the teaching of science.
- (2) To what we should teach.
- (3) To the possibility of improving the Science Curriculum in our schools.

In the first place, I shall take for granted that the pupil, in his Public School Course, has become familiar

with various facts and phenomena which should form a substantial basis for the science work of the High School. In his nature study, he will have been brought into contact with actualities and occurrences. Habits of observing, discriminating, and thinking independently, will have been inculcated. The pupil, so far, will have acquired very little mathematical skill and consequently it would have been foolish to try to give him any real systematic work. Having entered the High School, he can now begin intensive laboratory studies and so cultivate the power of logical thinking. A golden opportunity is now presented to the teacher but, simultaneously he must assume a tremendous responsibility. Much time and thought must be devoted to the arrangement of his work, unless he is burdened with the idea that he is there to cram information into the minds of his pupils. Fortunately, during the last dozen years, educational authorities have come to recognize that good science teaching does not depend on the quantity of information given, but on the power gained in arriving at such knowledge. The habit and spirit of accurate investigation must be implanted in the minds of the pupils, and to achieve this the course should be experimental, and scientific method should receive great consideration. Experimental work does not mean that the teacher should do the experiments (he must do some), or if he does make the pupils do them, that the information which the experiment is intended to convey should be given beforehand. The pupils ought to make first-hand investigations, proceeding logically, and as little as pos-

sible of explanation being made by the teacher. Self-reliant and independent habits are therefore fostered. Discussion should follow and deductions made. If the information desired is quantitative, the results worked out by each pupil or group of pupils ought to be put on the blackboard and the average taken after the poor results have been deleted. In this way the pupils will get some idea of scientific method.

However, the teacher must not be content with actual observation, for it is scarcely less important to have each pupil record what he actually sees in a clear, neat, concise, logical manner. A good notebook is absolutely necessary and should be kept in the school. Unfortunately this is not always possible. The pupil ought to be impressed with the idea that he is making his own text book, and consequently, lucid descriptions, good composition, clear diagrams, careful tabulation and logical conclusions must be insisted on. In this manner science can be correlated with English and Drawing. Undoubtedly such a method will provide one of the best exercises in Composition that the pupil can possibly obtain, especially if the teacher remembers that the method of dictation should be adopted only on rare occasions and to give coherence.

In performing the investigations, simple apparatus should be used as much as possible, and the pupils should be accustomed to fit up their own. This ought to be kept clean, and when not used, have a definite place assigned to it. Cleanliness and orderly arrangement ought to be observed in every laboratory. Surely such a training would be of inestimable value to the pupil.

In these cursory remarks the writer has attempted to state what he considers the fundamental principles of science teaching in schools. The method adopted hitherto in most of our universities should not be adopted in the school. Let me, however, consider the second point under discussion, namely, "What should we teach?" It

is obvious that the attainment of the pupils must be considered and imperative that the teacher have a clear, logical syllabus. There should be no overlapping of work as the pupil passes from grade to grade, and at all times the teacher should remember that the "laboratory is to study things." Systematic, intensive study has commenced. Seeing that chemical phenomena are of a higher order of difficulty than those of elementary physics, it would be well to make the course mainly physical during the first year. Physical principles are necessary for the proper interpretation of chemical changes and laws. Furthermore, Botany can only be understood after the fundamental principles of physics and chemistry have been learned. In making a course we must consider, as stated above, the attainment of the pupil and grade our course accordingly, so that we may pass from the known to the previously unknown. What, then, should be included in our course, and in what order should it be presented? Allow me, therefore, to state a course, typical of the work done in places adopting the experimental method.

Physical Measurements

Lengths, areas, volumes.

The lever, principle of moments, the beam balance.

Spring balance, mass and density.

Physics of Air and Water

Pressure, barometer, Boyle's law, U tube.

Hare's apparatus, siphon, hydrometers.

Specific gravity, principle of Archimedes.

Heat

Temperature, thermometer.

Expansion quantitatively.

Melting and boiling points.

Conduction, convection, radiation.

Law of cooling.

Quantity of heat, calorimeter, specific heat, latent heat.

Coefficients of expansion of solids, liquids and gases.

Charles' Law.

Dew point and hygrometry.

Introductory Chemistry

Mixtures, compounds, physical action and chemical action.

Separation, filtering, decantation.

Solution, crystallization, distillation.

Chemistry of Air, Water and Combustion

The indestructibility of matter.

Acids, bases, salts.

Chemical Studies of Common Substances, such as chalk, carbon, salt, nitre, ammonia, sulphur and bodies derived from these.

Law of Constant Proportion, gradually developed by the quantitative exercises done throughout the course.

Equivalents of common elements.

Law of equivalent proportion.

Personally, I think the teacher ought to be allowed a little latitude in making his own course, because each town and district has generally some distinctive peculiarity, and every teacher has preferences for certain lines of work. There is enough work outlined above for three years, but suppose we ask the pupils to do it in two years. What, then, can we give in the third year? Well, there are many subjects to choose from, all of which present splendid opportunities for experimental work: More advanced chemistry, light, sound, experimental mechanics, magnetism, electricity, botany, vegetable physiology. If the teacher so desires, he might introduce a text book during the last year to make certain of coherence of matter, and the pupils ought to be encouraged to read, in their leisure hours, books and magazines treating of science. Pardon me if I express one strong conviction about chemistry. This subject should be approached, not from the analytical, but most decidedly from the synthetical standpoint. Quantitative experiments should establish the fundamental laws of chemical combination, but "chemical theory should

occupy a very subordinate place." Formulae and equations should not be used until after considerable time has been spent upon the subject, and the atomic weight should never be considered until "equivalents" have been worked out experimentally. Formulae and equations cannot be banished from the curriculum, but may be used, "not as expressing molecular changes, but solely as a shorthand expression of the proportion by weight, in which the elements are found by experiment to combine." The use of equations has such enormous advantages in assisting the memory, in bringing out analogies, and in expressing the results of quantitative experiments in a form at once compact and easily comprehensible.

We now come to our third heading. Suppose you agree with what the writer has already said; then the Science Curriculum (Arts) of Manitoba can be improved. In short, what is the curriculum?

First Year

Elementary Science, with no definiteness—a ramble over several subjects. The majority of the teachers, I make bold to say, have no fixed idea in their minds what they are expected to teach. A text book is given to the pupil, but the teacher is not expected to "stick" faithfully to the contents. Pupils are compelled to keep a record of their own observations, but here again the teacher too often does not know what is expected of him, and consequently the pupil does not know. Experimental work, on the whole, is conspicuous by its absence. Furthermore, many points are mentioned in the text which have to be taken at a later stage. The information is given in the first year, and so the greatest benefit from science teaching is denied the pupil, namely, the arriving at his own information by induction. Lack of curiosity, of interest, of desire for research on the part of the pupil is the fatal result. If such a course is intended for those in the country who leave the school at an early age, why not include it in a sup-

plementary course for rural schools? Such a course would be a continuation of the nature study, and should include matters pertaining to agriculture and horticulture; school gardens, window boxes and flower pots, influence of manures in increasing the fertility of the soil; rocks and soils in the neighborhood; life histories of weeds and insect pests, and simple remedies against them tested; wind and insect pollination of plants; rudiments of chemistry, of air, water, soil, etc. Those who intend to continue school will gather such information, but require more intensive study along definite lines.

Second Year—Botany

Nature study along botanical lines can be taught successfully at this stage, but I defy any person to understand botany without previously becoming acquainted with a little physics and chemistry. Answers in the Departmental Examinations bear out too frequently such a statement.

Third Year—Physics

There is one criticism the writer would offer here, namely, "there is too much to do well on the experimental and inductive method." The text is so suggestive that it might be well to omit the chapters on sound and light. Students taking first class teachers' work must find their work in physics very easy after the previous year's work.

But what of chemistry? Is there no justifiable place for this fundamental subject in our Arts Curriculum? We cannot say that the farmer, the engineer, the professional man, the housewife, do not require the facts that chemistry supplies. We cannot say that it requires very expensive apparatus to teach. There is no subject more suited to individual work, and perhaps no subject among the sciences which creates more interest. Furthermore, we require chemistry before we can understand the slightly more advanced work in physics and botany. It would there-

fore appear that we have put the "cart before the horse," and instead of elementary science, botany and physics, in the order named, we should have physics, plus introductory chemistry, and botany. When these have been taught, then the pupils have got elementary science. If I were asked to suggest a course suitable under present conditions (remember, under present conditions) I should give the following:

First Year—Experimental Physics, based on chapters 4 and 6 of Mann & Twiss, omitting the subjects of "Work" and "Saturation." In summer and autumn months, observational work, a continuation of nature study, many drawings. Three hours per week.

Second Year—Chemistry. The fundamental ideas already stated. Followed by botany in the summer months. Three hours per week.

Third Year—Physics. Chapters 1, 2, 3, 5, 7, 8, 9, 10, Mann & Twiss. This would not necessitate a change in apparatus or in text book. Three hours per week.

In all these years, experimental work should play the predominant part. The reports of the various experiments, dated, and neatly and logically written out in the pupils' best composition, should appear in good note books, which might be produced for inspection at the end of the third year.

In conclusion, the main purpose to be kept constantly in view is "to render the course of study effective as a means of mental discipline. The value of the work will depend upon its spirit and method, and upon the power of initiative and self-reliance developed in the pupil, rather than upon the amount of examinable knowledge acquired."

P.S.—I should like to name a few points in general that might profitably come up for discussion:

(1) Could the high school course not be made four or five years by shortening the work in the primary grades by two years or one year? Personally, I

think the amount of work attempted in the primary school can easily be accomplished in six grades.

(2) Introduction of a qualifying certificate at the end of the sixth grade.

(3) Introduction of a supplementary course for those not intending to go for three years to the high school.

(4) Introduction of a leaving certificate in our province.

PROF. J. A. DALE

Prof. Dale is one of those educated Englishmen who find congenial spheres of labor in the British Dominions beyond the seas. He first saw the light



PROF. J. A. DALE

in Joseph Chamberlain's old town, the busy city of Birmingham. This event occurred in 1874, so the Professor can

still claim to be in the ranks of the young men.

After finishing his academic training at Merton College, Oxford, he became a tutor in one of the Teacher Training Colleges in London. Shortly after this Prof. Dale became lecturer on Literature and Education in connection with the extension work of Oxford University. After six years of this work he entered upon his work at McGill University, Montreal.

Prof. Dale's active connection with education is pretty fully indicated by the offices that he holds at the present time, and which are as follows: President of the Protestant Teachers' Association of the Province of Quebec, Managing Director of Bishop's College School Association, and member of the Council of Public Instruction of the Province of Quebec.

The Manitoba Educational Association is fortunate in securing the services of so energetic and capable a man at the Easter Convention. Let the teachers of the province give him an enthusiastic welcome.

TENTH ANNUAL CONVENTION OF THE MANITOBA EDUCATIONAL ASSOCIATION

GENERAL SESSIONS

Tuesday, April 6th, 2 p.m.

Address of welcome—President.

Musical selections—Pupils of Provencher School, St. Boniface.

Municipal welcome—Mayor Waugh.

Address—Hon. G. R. Coldwell, Minister of Education.

Address—"The Moral Objective in

"Business as usual" is also the motto of the Executive of the Manitoba Educational Association, and they are consequently preparing for convention again this year, which they confidently believe will be of great interest and helpfulness to all who attend.

The following is substantially the programme that will be presented April 6th to 8th:

Modern Education," Rev. W. J. Hindley, Winnipeg.

Wednesday, April 7th, 2 p.m.

Address—"The Teacher and the Community," Chas. K. Newcombe, Superintendent of Education.

Musical selection—Pupils of Winnipeg Public Schools.

Address—"What may We Expect from Education?" Prof. J. A. Dale, McGill University, Montreal.

Wednesday, 8 p.m.

Public meeting.

Musical programme.

Address—"The Tragedy of German Education," Prof. Dale.

Thursday, April 8th, 1.30 p.m.

Business meeting.

Music—Pupils of Winnipeg Schools.

Address—Dr. J. Halpenny, Winnipeg.

Address—"Educational Ideals and the War," Prof. Dale.

SECONDARY SECTION

Tuesday, April 6th, 9.30 a.m.

A conference of university, college and high school instructors, at which Mr. S. E. Lang will present the report of the committee on the high school course which was appointed last year. The discussion on this subject will be led by a number of college and high school men.

Wednesday, April 7th, 9.30 a.m.

Sectional Meetings

1. Classics and Moderns—Chairman, Mr. D. McDougall, Brandon.

2. English and History—Chairman, Mr. W. B. Beer, Brandon.

3. Science—Chairman, Mr. J. S. Little, Winnipeg.

4. Mathematics—Chairman, Mr. A. C. Campbell, Winnipeg.

5. Agriculture—Chairman, Mr. E. Robinson, Stonewall.

6. Technical and Manual Training—Chairman, Mr. W. J. Warters, Winnipeg.

Thursday, April 8th, 9.30 a.m.

Receiving reports from sectional meetings regarding the high school course.

Discussion of the reports.

Election of officers.

ELEMENTARY SECTION

Wednesday, April 7th

Sectional Meetings

I. Rural Conferences. Chairman, Inspector Fallis, Neepawa.

1. "Making the Rural School Literary a More Important Factor in the Community," Inspector Maguire, Portage la Prairie.

2. "The Rural School Time Table."

3. "Handwork in the Rural School," Mr. Emsall, Teulon.

II. Primary Conference.

1. "Busy Work," Miss Krause, Gretna.

2. "Supplementary Reading and Readers."

3. "The Writing Problem in the Primary Grades."

III. Intermediate Conference. Chairman, Bro. Joseph, St. Boniface.

1. "Map Drawing and Map Building in Grades IV. and V.," Mr. Palmer, Neepawa.

2. "The Importance of the Oral and Written Story, and Its Relation to the Teaching of Geography, History and Literature," Miss A. Johnstone, Dauphin.

3. "How to Apply the Course of Drawing as Outlined for the Grades," Bro. Henry Grenon, St. Boniface.

IV. Senior Conference. Grades VII. and VIII. Chairman, Inspector Walker, Dauphin.

1. "Rapid Arithmetic," Mr. W. J. Henderson, Gilbert Plains.

2. "Our Aim and Method of Presentation in Teaching," "The Lady of the Lake."

3. History—Time Relation and the Importance of Dates," Inspector Herriott, Gladstone.

Thursday, April 8th, 9.30 a.m.

Meeting of Whole Section

1. "The Teacher as a Community Leader," J. S. Woodsworth, Secretary of Canadian Welfare League, Winnipeg.
2. Geometry.
3. "The Importance of Our Field of Work," Dr. W. A. McIntyre, Normal School, Winnipeg:

4. Reports of Chairmen of Rural, Primary, Intermediate and Senior Conferences.

5. Election of Officers.

There will be courses of instruction of three sessions of two hours each in basketry, paper-folding and cutting, sewing and drawing, conducted by competent teachers.

THE DUTY OF THE CONSOLIDATED SCHOOL TO THE RURAL COMMUNITY

By FRANK S. COCKBILL

In dealing with the relation of education to the development of the rural community, one cannot help but feel that one is dealing with a large—a boundless subject; and it is very difficult to limit oneself to particular phases of the subject.

In a province such as this, which is growing with great rapidity, we may say that the present is the vital stage, when it is necessary that all forces should combine to keep that growth in the right channels and to promote it wisely.

We dislike to see a tree or a plant which has grown rapidly but in a bad shape and disproportionately, and we want the growth of our home province to be ideal.

That it is possible for the growth of a province or state to be distorted we know—the depletion of rural communities and the continual gravitation cityward, the unrestrained gambling in land values and many other undesirable features are ever before us—and I feel that the school is the most powerful factor to promote the prosperity of our province.

In the past, the schools in rural communities, though their laurels may be by no means negligible, have not been able to fill their place in such a capacity. Small, isolated buildings, frequently with young, inexperienced, though perhaps enthusiastic teachers—they

have found the burden of teaching the usual items of the curriculum as much as they could bear.

Now, however, we are in the midst of a period of transition. The small, one-roomed school is giving place to the large consolidated school; the modern, well-equipped schools, previously found only in our cities, are being spread over the countryside, and offering their splendid and incomparable opportunities to the erstwhile neglected farmers' children. This movement of consolidation, which cannot be promoted too vigorously, should be the greatest force yet originated for the benefit of this province. A consolidated district is able to acquire efficient teachers, to supply necessary equipment and to finance extra undertakings. The buildings are usually spacious and adaptable to receive the necessary apparatus.

From a school of the size and character of most of our consolidated schools the district has a right to expect, not only a more thorough, but also a more extensive education.

It is the duty of the school to benefit the community, and consequently it must teach the foundations upon which successful agriculture can be built. It cannot, and does not expect to, take the place of our agricultural college and teach detailed agricultural processes, but it can and should supply the

groundwork upon which intelligent agriculture must be founded.

It may be advanced that agriculture has for some time past been commonly taught. It has, but in a very haphazard and groping way. Children plod mechanically through a textbook, plant seeds, usually chosen by the children according to their own wayward fancies, in a so-called school garden and watch them grow—or choke—and perhaps make notes on nature in a hit-and-miss style so well known.

We need to make our agriculture and social usefulness teaching of a virile, interesting and intellectual character, to make it part of the child's life and interests, and to arouse the spirit of research and desire for knowledge in this most vital and most noble industry of our country.

We must carry on those activities which provide food for thought and bring results. The school garden should provide experiments in the testing of seeds, selection for quality, plumpness, variety; in the testing of growing conditions of the soil, methods of cultivation, root systems, germination under various conditions, uses of fertilizers, etc.

Let the children collect their own experiences, listen to their parents' discussions of various problems. Let them make plans of their home farms, showing locations of bush, pasture, crops, gardens, buildings, etc.; let them make a plan of the farm buildings, and then let them draw up a plan of an ideal arrangement of farm buildings, they themselves furnishing details and reasons. By drawing these to scale we have a very useful adaptation of our arithmetic.

Let us not in teaching agriculture blindly follow a textbook, but let us link its teaching with what is going on in the neighborhood. In preparing children for farm life we need to make it attractive to them, to let them see that farming is a science and requires education and originality, inventiveness and knowledge; to convince them

that a farmer is not a man who works unintelligently at a fixed routine from dawn till long after dark, and whose life is dull and uninteresting, but that the farmer is the basis of our country's existence.

Let them see the romance and the spirit of enthusiasm there should be in gleaning the first fruits of nature's resources. Let them see that farming is the noblest of all occupations—the supplying of nations with bread.

Convince them that successful farming requires as much skill as successful medical practice, machining, teaching, or as any of the so-called professions.

Show them the nobility, the freedom, the naturalness of a farmer's life—free from the artificial existence, the parasitic grabbing of many other pursuits. Every man lives on what is produced from Mother Earth: the farmer produces it—the commercial world lives by a systematic method of taking from it.

In line with the teaching of agriculture is the teaching of handwork. A very efficient equipment for a course of woodwork can be installed in the basement for less than \$50, and the boys take to such teaching as a duck takes to water. It gives them skill in the use of their hands, provides opportunities for the display of originality and initiative, and keeps the bigger boys at school. A lady teacher can give a course of sewing to the girls simultaneously. In the larger schools a small forge can be introduced, and the local blacksmith's assistance for three-quarters of an hour a week called in. A small milk-testing outfit can be procured for less than \$15, the Babcock tester being clamped on the end of the carpenter's bench when required, and the pupils can test the richness of the milk of individual cows, finding out the unprofitable boarders. Surrounding farmers can have their milk tested by the school free of charge, and their seed tested for germination and purity in the spring.

The consolidated school should have

one room at least provided with lights and a literary society should be organized, meetings being held once a fortnight or as convenient. Debates on live topics could be arranged, musical items promulgated—all drawing out the latent talent of the locality.

During the winter a weekly evening class can be held. There are in every district farmers whose opportunities in youth were very neglected, and who would support a class which taught farm arithmetic and measurements, de-

termination of areas, business correspondence, principles of banking and keeping of farm accounts.

This article can attempt only to indicate the way in which the consolidated school can make itself a progressive factor in the community. Its influence should be such that those who opposed its inauguration—and, like the poor, these are ever with us—may be forced to say: "Well, there certainly has been a great improvement since the new school opened."

SIX THOUSAND MEN

("Nearly six thousand men took part in the march past on the occasion of the visit of H.R.H. the Duke of Connaught to Winnipeg."—News item.)

Six thousand men! Long lines of khaki-clad figures, long lines of marching feet, long lines of squared shoulders and proudly held heads! How the mind staggers as it dwells on them! What a world of men and women have worked that those stalwart figures should march past, equipped from head to toe as members of our army should be.

How many ranchers have clipped their sheep to make the woollen suits and coats? How many tanners have tanned the leather for their boots and straps? How many niggers have worked in the sun gathering cotton for them? How many peasants have gathered flax, and how many looms have woven it? How many tailors and factory hands have spent long hours cutting and stitching uniforms and coats? How many bootmakers have cut and shaped and hammered at their boots? How many hatters and furriers have toiled for long hours over their caps? How many women have stitched and shaped their gloves? How many armourers and woodworkers have worked day and night to get out their rifles? How many patient wives, sweethearts and mothers have knitted their scarves and socks?

Six thousand men! How the heart

aches over them! Strong and stalwart, every one the beloved of some woman. Could we but look back down the years and see the six thousand mothers who brought these men into the world, what stories far stranger than fiction would move before our eyes like cinematograph pictures! In the meanest huts, in the wealthiest palaces, under tropical skies, and within the hushed shadows of the polar regions, were the homes of these men—in every home a mother with a son, the pride of her eyes. Under the sunny skies of Italy among the olive groves was the mother of that handsome, dark-haired, swarthy boy just passing. Away north in a Hudson's Bay post on the edge of the wilderness was the brave pioneer mother of that captain in full regimentals passing by with his men. Far away on the desolate sea-bound coast of Iceland lived the mother of another rosy-cheeked soldier lad. The burning African sun shone on the farm home from which came that brave young veteran, with the memory of another war in his heart and shadowing his eyes. Among the banks and braes of bonny Scotland are the mothers of many of the tallest and broadest of the rank and file, and the cleverest and bravest officers; and tragic Ireland was the birthplace of many of the happiest-hearted of the khaki-clad defenders, whose mothers wait anxiously for word of the sons

who have gone to far away Canada. Here are lads whose mothers can look back and remember this same Portage Avenue a wavering trail of mud. Theirs was the brave duty of bearing men worthy of this Western country which was to be their heritage. Theirs to endure the bitter cold and hardships of the early days, that their sons might defend the mother land in the time of trial. This tall, fair young lieutenant left a titled mother in an ancient, impoverished home in England; while the handsome corporal behind him proudly acclaims his mother the descendant of the ancient race that once hunted the buffalo on our virgin prairies. And so they come, six thousand marching men, and behind each one the shadow of a mother whose heart aches with love and pride. And nearer and ever present in the thoughts of every man is the wife, or the girl who is one day to be the wife. And how varied she is! She is dark and fair, short and tall, sweet and strong, clever and stupid, loving and cross; but always she is "the one girl." She perhaps rules the home and mothers the children, or takes a daughter's place and dreams of the days "after the war" when she may have her own home. What courage is hers and spirit of brave sacrifice when to her country she offers what is the very core of her life! For dreary months her heart is filled with loving anxiety, and her days are years of waiting for news from the front. In each man's heart is this little vision enshrined—his home, and the centre of his home, his wife. And so for all these six thousand and men there are six thousand wives waiting and praying for their safe-keeping.

Six thousand men! How the soul broods over them! Lithe of body, clear of eye, fearless of spirit. Brains with

the possibilities of wonders. Minds stored with the treasures of the ages. Hearts full of love of home, and dominating all the wild excitement, the tense eagerness of primitive man for the conflict. Among these khaki ranks are men who in time to come may control the destinies of nations; men through whose powers of mind the issues of peace and war may be decided for all time; men through whose strength of body and will the wilderness may be made the granary of the world; men through whose venturesome spirit the remote corners of the earth may be made to yield their treasures to civilization. Here are the brains that in the laboratories of the world may discover the secrets of nature hidden since the creation of the earth, and through the power of men's minds brought to the service of the world. Here are minds whose high and noble thoughts may make sacred for all time the pages of the world's books. Here are hands, guided by far-seeing eyes, that might perpetuate on canvas the beauties of our century. Here is love that can transform a hovel into a home, and offer surety for the happiness of children yet unborn. Here are men born to serve—men born to rule. Here are men who can build houses—men who can save lives.

Six thousand men! A part of all the possibilities of all the ages. Marching with brave eyes towards the hideous crucible whose heat is felt from pole to pole. In this great melting pot is the world pouring, always pouring the work of men and women, the love of men and women, and the brains and minds of men and women. And what shall come from that great fire? Shall it be the gold of a lasting peace? God grant it may.—Hilda Hesson.

The children in a junior class were told to write sentences with the following words: Cattle, pane, sigh. This is the result: I go to the cattlieck church. The window has a pane. My father sighs the grass.

DEPARTMENTAL TEACHING IN THE ELEMENTARY SCHOOL

In the elementary school a pupil has the same teacher all the day long. In the high school he may be under the direction of a number of teachers. It has often been asked whether the departmental system could not well be introduced into the Elementary school. Roughly speaking the following arguments are advanced:—1st, under the departmental method there will be better teaching because the teachers know their work better. 2nd, under the other method the pupils will be directly under the supervision of some one who is directly interested in their welfare the whole day long.

Before one could give an answer to the problem presented he would have to take into account many considerations. One consideration would be the attitude of the children themselves. In one of the cities of the United States where the method of departmental teaching has been introduced into Grades VII and VIII for three years, the pupils were asked to give their opinions. Of course their opinions should not settle the matter, but they should be recognized by any one making an investigation. Here is what the children have to say: More than 80% preferred departmental to the one-teacher system, and more of the Grade VIII pupils preferred it than the Grade VII pupils. A greater per cent. of the girls preferred it than the boys. The reasons for preferring the departmental system is contained in such statements as the following:—1st, we learn more because the teacher can teach two or three subjects better than eight or nine. 2nd, there is

variety, change and increased interest. 3rd, it is easier to get along with several teachers than with one. It is interesting to note that 61% of the pupils assigned improved teaching as a reason for their preference, and only 22% assigned variety and change. It is also interesting to note that twenty-five pupils gave as a reason for their preference that it made the work easier for the teacher. Surely this shows a delightfully altruistic spirit.

Twenty per cent. of the pupils preferred the one-teacher system for the following reasons:—1st, it saves time. 2nd, it prevents confusion and disturbance. 3rd, the teacher knows her pupils better.

One lone pupil thought that the one-teacher system was more interesting for the teacher.

Among the peculiar answers given by pupils were the following:—1st, it is nicer to hear different teachers' voices during school time. 2nd, they are more strict than the teacher I always have, and I like this better. 3rd, we might learn more if we had several teachers or if we had one may be we might not learn as much. 4th, it is kind of dreary having one teacher all day.

In conclusion it may be said that the advantages assumed by the advocates of the departmental system have been confirmed by the evidence and experience of pupils themselves. This is good collateral evidence that the system is successful. The result of the enquiry is interesting and significant even if it is not conclusive.

“Name the juices that assist in digestion.”

“The juices that assist indigestion are saliva and paregoric.”

In a class there was a boy named Vernon and one named Mervyn. Small wonder is it that the teacher's tongue tripped one day and she called one of them Vermin.—Jesse Ketchum School, Toronto.

School Room

FORMS OF WATER

I.

The first question is:

"Where does the water come from that falls when it rains?"

I want you to think and not reply haphazard. We are to be philosophers this morning; they are in no hurry and never speak until they have come to a conclusion.

1. "The water is in the clouds."

2. "The water rises from the ocean and lakes and makes clouds; then it comes down in rain." That answer seems to suit most of you. Well, Mary?

3. "I want to know how it is that the water rises. What makes it rise?"

A good question. Does the water rise? Who has seen it rise? What proof is there that it rises?

4. "Why the pond on Mr. Bradford's farm is all dry; there used to be a foot of water in that."

Who else has a proof?

5. "I put some water in a saucer and in an hour it was all gone."

6. "If you put some in your hand it will evaporate in a few minutes."

All these are proofs of something. Of what, John?

8. "The water goes into vapor."

Does that seem to be the thing. You seem satisfied. How many have seen water go into vapor? How many believe that the water in Mr. Bradford's pond went into vapor? How many think the water of the ocean goes into vapor?

But that is all for to-day. To-morrow you will have more to say about water.

II.

9. Now here is the question from the box:

"What puts the water into vapor and keeps it in vapor?" William?

Why?

10. "I think it is heat."

11. "Because the teakettle boils with heat and makes steam; you have to apply heat to make water go into vapor."

Where does the heat come from?

12. "From the sun. Now we have got from water to the sun. The sun has a good deal to do with the earth."

13. "The sun keeps the water as vapor in the air."

How do you know? Give us proof?

14. "If you have a pitcher of cold water it 'sweats.' My father says it is the vapor in the air that makes the 'sweat.'"

It is the air that sweats and not the pitcher? Is that it? Give more examples that show the air has water in it.

15. "The dew."

Who have seen dew? Why does it fall? Tell us some uses coming from the holding of vapor by the air.

III.

The question to-day is:

"What turns the vapor into rain?"

16. "The vapor becomes clouds and the clouds cannot hold all the water and so it falls."

17. "I have seen a cloud disappear."

What caused it?

18. "My father says a warm current of air does that."

19. "A cold current makes the vapor become a cloud."

20. "Rain is caused by a cold current of air rushing into a warm cloud."

Could we make an experiment like that?

21. On washing days if a cold current of air comes in at the window it will make a sort of fog in the room."

IV.

There are 15 questions left in the box. I will let you copy them.

1. How is it we see our breath?

2. Do clothes dry faster on a windy or a still day?

3. Where is the dew before it falls, say at noon?

4. "What is meant by "the sun drawing water"?"

5. Why should we never sit in a draught when heated?

6. In what direction will a cloud travel?

7. How fast will a cloud move?

8. How can clouds be moving in two directions at the same time?

9. Why do we see most clouds in the evening?

10. Are all rain drops of the same size?

11. Why does it rain harder after a heavy clap of thunder?

12. What are the signs of rainy and fair weather?

13. Where is the sun on a cloudy day?

14. How high are the clouds?

15. Why is rain water fresh when it comes from the ocean?

THE SCHOOL LUNCH

The subject of lunches is deserving of careful thought not only as to materials used, but as regards proportion and accessories. Good digestion is prone to "wait on appetite, and health on both." The ordinary lunch basket, pail, box, napkin, or paper, with its contents, too often frightens appetite away; and the manner of disposing of the contents begets bad table manners.

Oblong boxes of tin, about the size and shape of an ordinary shoe box, are the best in which to pack the lunch; if these cannot be had, pasteboard boxes are the next best, but must not be used many days as they will absorb odors from each day's food. Baskets while convenient to carry are difficult to pack and allow the food to become dry and unpalatable. Tin pails are not convenient for packing. Napkins and paper are inconvenient to carry. Whatever is used should be spotlessly clean; if tin it should be scalded in boiling water, daily.

The food should be prepared with some reference to looks, also; it should be put up neatly in a box. Bread should be cut thin and spread evenly and thinly with butter, and "doubled" in sizes convenient for handling without knife or plate. "Slabs" of bread and butter, "chunks" of meat, cheese, or pie, should be left at home. The meat should be daintily sliced, then placed

between thin layers of bread or by itself in a white napkin or clean white tea paper. So of pickles, and of cheese—though these condiments should be sparingly used. Jellies, and other solid sauces, baked pears and apples, custards and Saratoga potatoes, may be put in small cups and neatly tied over the top with white paper. Boiled eggs, if hard, should be divested of shells, then treated like meat; if soft, a cup and spoon must be provided, unless the English style of eating eggs from the shell has been learned, which requires only a very small spoon.

Tea, coffee, milk, chocolate, or cocoa may be seasoned and put in a small bottle tightly corked. Beef tea, home made, is nutritious and palatable; so of barley coffee, and crust coffee; and any of these may be heated in a cup kept in the desk for that purpose by the school fire. So of the numerous canned soups which are now sold. Something warm with a cold, dry lunch, is a wonderful help in the afternoon school-work.

Sandwiches are toothsome only when daintily fashioned, and cut to the proper size, narrow strips about three inches long; they may be of bread and butter or crackers for the outside (Graham crackers preferred) with a filling of meat, sliced thin or minced; eggs, sliced, chopped, or scrambled; jelly, jam, marmalade or any sauce that is not

too juicy; fruit sandwiches are very palatable. Cookies with fruit between make a delicious combination.

Fruit should be a staple in the preparation of a lunch; fresh when possible. Celery in its season, water cresses, nasturtium stems, and grape leaf stems are

good with a plain bread and butter lunch or one with bread and meat.

A napkin and small drinking glass should accompany each lunch; the latter may be kept in the desk. They are absolutely necessary. The lunch should be an object lesson in refinement.

HOW LONG?

It used to be supposed by teachers that a young pupil could apply himself to the study of a lesson for as long a time as an older one; it only needed the disposition. Such scenes as these are not uncommon:

The "alphabet class" has been up to read; the teacher has pointed out the letters, and the pupil has given the name; they may have spelled the words, as b-a-k-e-r, etc., or they may be a little better off; they may have a First Reader, and may have read a lesson, spelling words they cannot pronounce! Yes, this foolish time-wasting, energy-wasting process is still going on.

This being over, the class are sent to their seats and told, "Now study your lessons just as hard as ever you can." The teacher calls up another class and is busy with that, when she sees one of the alphabet class looking off his book.

"John, how many times have you studied over those words?"

"Ten times."

"Well, study them over ten times more," says the teacher, kindly.

The lesson has gone on for a very short time, when the teacher sees this pupil not only looking off his book, but absolutely whispering!

"John, I told you to study over those words. If you don't study now you will have to stay in at recess." This is said with some sharpness. In five minutes more John is discovered neglecting "those words," and at play, and the teacher snaps his ear; she is greatly annoyed that her words have so little effect.

But it is not wickedness that causes

John to neglect "those words"; the power of attention in all of us is limited. A discussion has been lately going on as to the proper length of the sermon; it is conceded that few congregations can be profited by one over fifteen minutes in length.

The question as to how long John can give his mind to "those words" is a physio-psychological one. The most experienced teacher would say five minutes for the younger primary children, seven for those a little older. After that some other subject should be supplied, so that John is obeying the craving of his natural powers for a change of subject of thought.

Some years ago Supt. MacAlister found a teacher taking the whole morning session on a primary arithmetic class that had got behind, nor did the teacher see any impropriety in this. She could not see why they could not give their minds for a whole hour to following operations on numbers. And she intended to keep at them in the afternoon, too, until they were up to the standard!

One reason the kindergarten found friends at once was because the children went rapidly from subject to subject, and came out without weariness. Thoroughness is no word for the primary school. The first work in school is like the process of laying in water colors on the paper: a faint tint is washed on, so faint that it can hardly be distinguished from the white paper; another follows when the first is dry, then another and another at intervals. So in teaching young children the rela-

tion between the sign and the idea or concept is faint today, it is made stronger tomorrow, and so on.

Five minutes given by the attention today to the fact that the sign represents the thing is enough; let the mind now turn to another occupation for five minutes, then another; then it may come back to the first subject refreshed.

The teacher of young children must plan, then, for a varied programme, with short intervals, if she would proceed in accordance with nature; no

one who opposes nature will be successful.

Occupations in which the hand busies itself hold the attention for a longer period. The teacher, therefore, having given a group lesson, may occupy the children at their seats by two or more forms of silent work while teaching several groups. If this seat-work is related to the lesson, as it should be, a programme may be made that will keep the children cheerfully and profitably busy, both before and after the lesson as long as the teacher pleases.

WAYSIDE STONES

By E. M. H.

Quartz

The teacher goes to the school yard and finds there a piece of quartz. At the next session of school, she holds it up and asks if any one can tell what it is. "O, that's a stone!" says a piping little voice. "What kind of a stone is it?" asks the teacher. No one can tell. "We will pass it through the room, and each in turn may carefully and quickly examine it.

By the time this was done the five minutes for that day were over, so the teacher says, "We have no more time for the work today, but you have all looked at the little stone so carefully that I feel sure if you look around the yard and in the strets and fields you will find others just like it. How many would like to try and find one for me just like this?" Every hand is up in an instant.

The next morning almost every child has brought a stone of some kind, some have their hands and pockets full, and nearly every one has the right kind. As it is easy and pleasant work to draw the descriptive words from them, and soon these words are placed on the board—hard, rough, glossy. Then she has the pieces compared, that the difference of color and irregularity of shape may be noticed. Next she has them held up towards the windows and the children find they can, in many

cases, see the light near them, particularly through the edges.

Now is the time for a new word to be given to the little ones and the teacher remarks, "I am going to give you a long hard word which is just what you need in describing this stone, but it is so long that only the first class will be able to learn it, I suppose." You should see the look of importance and superiority that comes over the faces of the first class. It is promptly met, however, by a look from the second and third classes which plainly says, "See if we don't learn it as quickly as you." The word translucent is placed on the board and explained. As all are interested it is learned at once without the slightest difficulty. Nearly ten minutes are used for this lesson, but the children have given such close attention that the teacher is encouraged.

On the third day only a very few minutes can be given to this work. A few review questions prove that the former lessons are not forgotten, and now, for the first time, the children are told that the name of this stone is quartz, and the word is placed on the board. They learn how abundant this stone is, that it is often used for building stone; that sand is just quartz and other stones broken into fine particles; that it is the chief substance of which glass is made; that many plants require it, and that

the stems of grasses and grains would not be stiff enough to stand erect without it.

Little Edna, of the third class, rejoicing in her newly acquired knowledge and finding some pretty pieces of quartz on the way home, tells her mamma all that she has learned about them, and mamma, seeing with pleasure the child's interest, remembers that she has a pretty piece of crystalized quartz, which she finds at once for the little girl. With a smiling face Edna announces next morning, "I have some quartz crystals!" Every child in the room is eager to take that pretty specimen in his own hands and examine it, and so Edna is told to pass it through the room.

Now come the questions thick and fast. "Did this stone grow in this way? Why did it grow in this pretty way? Where was it found? Do you think we can find any like it? Why do you call these little points crystals?"

Interest in the subject is growing every moment, but the moments are flying, too, and the time is nearly up. "I have time to answer but one of your questions," says the teacher, but we will talk of this another time. You would like to find some crystals? Do you know of any gravel pits where men get gravel to put on the streets? Do you know of any stone walls? If so, look them over with sharp eyes. Search for stones with cavities in them or hollow stones; these will be likely to be lined with crystals. Hands were still raised, but the teacher, though glad to see that the questions were ready, said with a smile, "No more time to-day."

That very afternoon, in comes Willie with a hollow stone all lined and glittering with crystals. The little man will probably never feel better pleased with an hour's work while he lives than he does now. The interest which has been good from the first is at white heat now. Every child wants to examine the stone and all ask, "Where did you get it, Willie?" "In the gravel pit," answers Willie. The children can

hardly wait for school to close at night, so eager are they to search that gravel pit. And they were not disappointed. Next morning Maud and Isabel, Bertie and Eloise, each bring crystals, and so it goes on till in a few days from gravel pit, sand bank, and stone wall, over twenty specimens of quartz crystals are brought in by nearly as many different children. Some of them were really beautiful, containing many crystals, others only a few. But all were accepted and placed in a row on the table. The teacher is careful not to let the few crystals pass unnoticed, for she wishes the little child who has searched so patiently for them to see that his efforts are appreciated. She is pleased with their success, and surprised too, for she has examined the gravel pit before and not found one crystal. Surely the children "leave no stone unturned."

The children are now directed to write descriptions of quartz and to draw, as well as they can, the specimen they have written about. The following is Katie's paper, which is similar to the others. Katie is eight years old.

"The stone we are looking at is white. Some parts of it are gray. I have seen white, gray, red, yellow, pink, and brown stones of this kind. It is glassy. It is rough and hard. It is translucent because we can see a little through it. It breaks into different shaped pieces. It is used in making glass. I have seen a piece with crystals on it. The crystals shine. We find it everywhere. The name of it is quartz."

The week is ended and no extra time has been taken for this work, but what a pleasant week it has been for all-

The teacher feels that these little feet have passed through a new gateway and are standing on the edge of a field so broad that, live long as they may, they will hardly reach the opposite side. She rejoices with them in these their first discoveries in this field and encourages them to go on, knowing well how good and wholesome and satisfying it is to be fed.

Selected Articles

THE CULTIVATION IN YOUNG CHILDREN, OF A TASTE FOR THE LITERARY AND SCIENTIFIC

By MRS. JULIA McNAIR WRIGHT

This taste is not only to be cultivated in children, but is even to be created.

Most children are in a state of mental equipoise and receptivity, and do not so much seek intellectual food as accept what is given to them, or absorb what is left in their way.

There are exceptional children, who have subjective instincts so strongly marked that no unfavorable influences are able to divert or destroy them. Thus, we can conceive of no surroundings which would have made Agassiz other than a naturalist.

But the case with most children is, that we must decide what taste is desirable for them, and then cultivate it in them.

In this work of cultivation there are three almost equal co-laborers—the parent, the teacher, and the librarian.

Let us assume that the parent is convinced that a love for literature and natural science will develop the child in much which is worthiest in mind, morals, emotions, physique, and will crowd out of the mind and render odious the vulgar, brutal, and vicious. What shall be the method of cultivating the desired taste?

The attention of the child should be constantly called to the subjects in question, and in an attractive way they should be almost hourly presented in order to make them a habit of thought.

flower and its parts, the process of its growth, the bud as the flower-babe asleep, the leaf, the blade, the corn in the ear; the insect with its wonderful wings, its horny case, its clustered eyes; the fly that wheels over the table; the fish with its gleaming scales, its shape fit for gliding in water; the bird, its structure, its nest, its habits; the ant-

hill and the bee-hive and their inhabitants, these should be constantly but gently, almost insensibly, pressed upon the attention of the child. Even the manufactured object, the silk ribbon with its cochineal dye, the paper weight, the rubber eraser, may be made a gate into the wide domain of nature. Can any fashion of magnifying glass be obtained, let the looking through such glass be the choice treat and reward, reserved for high occasions, not too infrequent.

It is the parent's instant duty to give reading matter to that "reading animal," his child. It is a crime against the forming mind of the child to present to it coarse and hideous trash, either in picture or reading.

If only a ten-cent book can be bought, that book should be good of its kind. We may not be able to get high art for ten cents, neither should we invest the ten cents in comic valentine horrors.

The songs that are sung, the stories that are told, the verses that are repeated to the little ones, should be harmonious; they should have a harmony of word, thought, subject, method, so that they fill the infant mind with a certain divine rhythm, set silver bells ringing in heart and brain, and wed the notion of the good to the conception of the beautiful.

The parent should also encourage the child in the collection of books, and of natural curiosities. The child, from infancy, should be taught to respect books and handle and keep them orderly as peculiar treasures; to purchase books as it has opportunity; to make scrap-books of pictures, poetry, stories, and whatever product of print is worthy of preservation in this way.

Many short-sighted mothers, zealous for neatness, denominate the multitudinous seaside and wayside curiosities which children gather "litter" and "untidiness" and "trash," and quickly cart these collections out, often to the lasting injury of the child.

We commend to these parents the consideration that such collections, grown to a little private museum in the house, will be far more sightly and hopeful than the future pipe, ale bottle, or pack of cards, and it is an imperious demand of nature that children, that all people claim, own, and gather some belongings for themselves.

It is not necessary that the geological collection shall be scattered on the parlor carpet, the "bugs" laid out on the baking-table, or the shells find refuge in mother's work-basket. Indeed a first lesson as to cabinets will be that specimens have a legitimate place and should be ranged and cared for. But every child has a right to a place—if it be only a corner that can be spared—for such treasures; and the wise woman, who is "building her home," not a mere brick and mortar house, but that living house — her children, will provide shelves, or closet, or boxes, the very best that she can, and teach her children pride in, and care for, their specimens.

If she can only procure a handkerchief-box, asked for at a dry goods store when she is shopping, or a raisin-box with a pane of glass over it, she will secure these and make it plain to the child that specimens free from dust, with unmutilated wings, and the proper complement of legs and antennæ, insects carefully caught and painlessly killed, are essential to a useful collection. So the wise parent will help the child to dry flowers and mount beetles, and, with observant care, will point out new wonders and beauties.

But it happens that the well-intentioned parent may be ignorant, both of what to do and how to do it, and may have no idea of what books are to be had on the desired subjects.

Here the teacher, fresh from college or the normal, the convention, the institute, the schoolroom, has an errand to the parent as well as to the child. The teacher should diligently suggest to the parent what taste should be cultivated and what methods it is well to take and what are the means to the end.

But the teacher has a direct mission to the child in this matter. Taste for certain studies is more often roused in the schoolroom than brought to the schoolroom.

A beautiful thought, a melodious verse, a pretty turn to an idea, can be so pointed out by the teacher that the child's intellectual eye awakes and becomes observant to seek out and delight in such beauties of thought and diction.

By the judicious teacher the study of natural science can be so yoked to amusement, rest, and exercise, that the pupil shall scarcely know where one began or the other ended.

A teacher in a country school, when she saw sleep stealing into child-eyes, attention lagging, little mouths yawning like those of young robins, or drowsy heads bowed too low over slates and copy-book, was wont to say, "Here Anne, take your slate and pencil and go draw for me that thistle by the door." "Go, George, and for ten minutes watch that ant hill in the path, and then tell me what you see." "Go, and carefully examine that mullein in the fence-corner, and then describe it to us." It is needless to call attention to the carefulness of observation, niceness of comparison, and acuteness of deduction, and the descriptive powers brought into activity by such a course as this. Will George be likely, hereafter, ruthlessly to trample on the marvellous art city at whose gates he watched?

A corner of the schoolroom reserved, with shelves for birds' nests, wasps' nests, snail shells, and the many wonders that an observant child may find; a box with a glass lid, through which can be watched the metamorphose of

some splendid beetle or butterfly; little collections brought from mountain or beach and marked with the small donor's name,—these are the things which shall make the schoolroom as the home called beautiful to the memory and a present palace of delight to the child; and men and women of pure thought and refined taste shall rise up to call the teacher who presided there, blessed. The teacher should secure simple, attractive books on subjects in natural history, and the reading of them should be made a pleasure and reward to the pupils.

The teacher thus zealous in mind-cultivating finds an invaluable coadjutor in a well-informed librarian.

A conscientious librarian will have a certain acquaintance with the books in the library, their subject-matter, authors and literary excellences. This will especially be the case in regard to new books; the librarian examining reviews, notices, magazines, publishers' lists and announcements as they appear, will be ahead with the current literature on various topics. Thus in command of the field the librarian has a mission of suggestion to both parents and teachers and children, and here a conscientious librarian can become a potent educator and benefactor of a community. Very especially is this the case where children or very young persons come to the library to select their own books. They may select an amazing amount of useless or hurtful books merely because they have heard these mentioned or praised by other young persons or be-

cause they know of nothing else likely to please them.

A gentleman seeing a girl of ten often at a library, found she drew out and read many books of a generally useless character.

He said to her, "Why do you not read histories or travels, or something about natural history? You can find on these subjects easy, attractive books."

She replied: "I did not know there were such books except for grown folks."

He presented the child's case to the librarian, asking that her reading be helpfully directed, for a time, and requested the child to take, in succession, Abbott's "Mary Stuart," "Queen Elizabeth," "Marie Antoinette" and "Josephine." These, if not the highest style of historic reading, were as high as the child could then easily comprehend, were well printed, admirably illustrated, graphic and entertaining.

The librarian reported that the child was delighted with her new field of reading, and under guidance of the librarian she read not only histories, but travels; some of the highest types of juvenile books by our best authors, and was fascinated and led into a new world by Arabella Buckley's "Life and Her Children," "Fairy Tales of Science," and other works on natural history.

If parents, teachers, and librarians heartily unite in creating and cultivating elevated, helpful tastes in the young we shall enter on an age of intellectual giants. But giants are a race nurtured neither on chaff nor sweetmeats.

NORMAL SCHOOL TRAINING

The real aim of true normal school training is not so much to graduate those who can superintend as those who know how to teach. At the commencement of the civil war it was at one time difficult to recruit private soldiers. In one state it was proposed that permission should be granted to recruit a regiment of brigadier generals. The

individual making the application was certain he would find no difficulty in filling the ranks in a short time. It would be comparatively easy to find an army of men who would be willing to undertake the superintendency of New York City at a salary of ten thousand a year, but it would be somewhat harder to find many capable men or women

who would teach obscure country schools for five dollars a week. The money question is important—very important—but it isn't everything. Money doesn't make good teaching. The greatest possible injury is done to our schools when incompetent teachers get permanent places at good salaries. Nothing sticks like well paid ignorance in the teacher's chair, except well paid inefficiency in a superintendent's office. Permanency under some circumstances is an exceedingly bad thing. The sooner we can rotate poor teachers and poor superintendents out of office the better it will be for the taxpayers' pockets and the children's minds.

A great deal has been written about better pay that had better have been unwritten, because with it there has not been an effort made to make the quality of teaching better. Poor pay comes from poor appreciation. When any school-girl is considered able to teach school the people will not pay more than school-girls' wages. They

don't appreciate the work furnished, and they will not pay for it. All reforms must commence with the people. Here is the source of power. Out of their pockets comes the money.

The most stringent prohibitory law could not be enforced in a community where the people were generally opposed to it. If the majority wanted whiskey they would have it—law or no law. On the other hand, where the people are opposed to liquor selling, whiskey has small chance under any circumstances. The people must be educated. This is the most important work of progressive teachers today. They must show the people how immensely superior teaching is when compared with the humbug recitation. It is useless—foolish—to scold ignorant people into paying for what they don't want. In thousands of districts the people don't buy good teaching because they don't know what it is. How can they be expected to pay for what they have never heard of?

A USEFUL BULLETIN

Here is a note distributed by the National Safety Council of Chicago, Ill. It is the kind of thing that should be put before all children:

Concerning Pneumonia

The pneumonia season has arrived.

Not because the weather is colder—
 "Arctic explorers do not get pneumonia until they return to civilization."

Not because of raw winds, though these chill the body and thereby reduce resistance to the disease.

Pneumonia comes at this season be-

cause people close doors and windows to keep out the cold air, and thereby condemn themselves to breathe foul air in which the pneumonia germ rejoices and multiplies.

Keep your houses as warm as you like. People in this country are accustomed to warm rooms, and it would be foolish to make a sudden change.

But see that the place where you live and work has as much fresh air as possible.

A closed window shuts sickness IN, not OUT.

Russell, Lang & Co.'s advertisement in this issue of the Journal will be of interest to teachers who require books to be read to their pupils. The list was compiled by a member of the staff of the Normal School.

The Children's Page

An Irish Lullaby

I've found my bonny babe a nest
 On Slumber Tree,
 I'll rock you there to rosy rest,
 Asthore, Machree!
 Oh, lulla lo! sing all the leaves
 On Slumber Tree,
 Till everything that hurts or grieves
 Afar must flee.

I'd put my pretty child to float
 Away from me,
 Within the new moon's silver boat
 On Slumber Sea,
 And when your starry sail is o'er
 From Slumber Sea,
 My precious one, you'll step to shore
 On Mother's knee.

—Graves.

EDITOR'S CHAT

The top o' the mornin' to you, boys and girls! Has Mr. March Wind called on you yet? This is the busy month for the wind; he is Mother Nature's house-cleaner. You know when the strong spring sun shines how dirty the windows look, and how anxious mother is to get the curtains washed and all the winter dust out of the carpets? That is just how Mother Nature feels about her big house, so she calls in March Wind and he blows away all the dust and dead leaves, and tidies up the world after a rough fashion, like a broom in a house. And then come April Showers, and polish and wash everything, and so house-cleaned and bright, we are ready to greet summer.

There are several interesting birthday anniversaries this month. We will give you a list of them, and perhaps you will choose some of these well known people to write compositions about during March:

Michael Angelo, March 6, 1475.
 Luther Burbank, March 7, 1849.
 St. Patrick, March 17, 372.
 David Livingstone, March 19, 1813.
 Robert Bruce, March 21, 1274.
 Rosa Bonheur, March 22, 1822.
 Joseph Haydn, March 31, 1732.

Our prize story this month was written by Jacob Adams, Ridgeway School, Balmoral; and we give honorable mention to: Henry Dandy, Pierson, Man.; Dorothy E. Wright, Luther School, Deloraine; Fred Tod, Marion Tod, Nora Tod, Woodlawn School, Norwood; Alex. Hawryluk, Evelyn Gillespie, Kate McKinnell, Rosina Perich, Ursula B. Cunningham, Teulon Con. School; Guy Johnson, Agnes Gilmore, Ridge Road School, Portage la Prairie; Eva McDonald, Turiff School, Forrest, Man.; Glen Ferguson, May Scott, Glenlyon P.O., Man.

PRIZE STORY -- A SKATING ACCIDENT

By JACOB ADAMS, Ridgeway School, Balmoral

One bright, cold day last fall some of our neighbor's boys came to our place and asked us to go skating with them, so we got our skates and went to a little lake about a mile away from home.

After skating for a while we thought we would like to have a race.

My brother was a judge, and five of us were racing.

After going about three hundred

yards I looked back to see how far my mates were behind me, when the first thing I knew I broke through the ice near a muskrat's home and was standing shoulder deep in water. Soon the boys kindled a fire and dried my clothes and then we went home.

But ever since I have taken good care not to turn around and laugh at anybody who was behind.

ONE HUNDRED YEARS OF PEACE

By AGNES GILMORE, Ridge Road School, Portage la Prairie

Never have two countries been so peaceful through one hundred years as Great Britain and the United States. Never have centenary celebrations been celebrated with so much joy.

The last war between Great Britain and the United States was in 1812. I will not dwell on that bloody event, as there is surely enough bloodshed in Europe at present, but say that peace was concluded in 1814, on the 24th day of December, and was put in force on February 17th, 1815.

This peace is called the Treaty of Ghent, because it was signed in Belgium, in the City of Ghent. Strange to say, Belgium is now the scene of ruins and bloodshed. In Ghent, the only building left standing is the one in which the treaty was signed.

John Quincy Adams, T. A. Bayard, Henry Clay, Jonathan Russel and Albert Gallatin represented the United States; Lord Gamier, Henry Goulbourn and William Adams represented Great Britain for peace negotiations.

The United States were so tired of the struggle that when they heard in New York, on Saturday, February 11th, that the treaty had been signed, they hailed it with tears of joy. There were

illuminations and all sorts of festivity. Even Henry Clay, who had said that he hoped never to see peace until Canada was taken, was the first to join and sign the treaty.

After this peace in 1815, Great Britain trusted the United States so much that she only left about half as many soldiers in Canada. Every year there were less, until finally, in 1870, all the soldiers were gone.

Then the British warship, the "Favorite," went to the United States, it was treated with great kindness. On it were two messengers representing two countries.

Great Britain and the United States have had disputes over trivial things, the chief of which was deciding the border line between New Guinea and Venezuela in 1895. Some of the people talked of a war, but only one-quarter of them would consent, so peace was made.

Now we have no forts on either side, Canadian or American. The only thing to separate the two countries is a mere boundary line. Surely, since we have been so peaceful for one hundred years, it would be horrible and appalling to have a war with our neighbour country.

LUTHER BURBANK

You will notice this name in our birthday list, and perhaps some of you will wonder why it is there among so many well-known names. Have you ever heard the saying that "A man is great who makes two blades of grass grow where one grew before"? Well, if that makes a man great, how very great Luther Burbank must be, for he has made entirely new flowers and fruits by his wonderful methods, and he is known as the wizard of horticulture. To read of what he has done takes us back to fairy stories and days of magic wands. But this man really has no magic but his clever brain and fingers and his love of and interest in every plant that grows.

Luther Burbank was born in Lancaster, Mass., and was educated in the public schools. He worked as a boy in a plow factory, but he soon left there and began market gardening and seed raising, in a small way. In the year 1873 he perfected the Burbank potato, a particularly fine variety of our old friend. Shortly after this he decided to go to California, where in a delightful climate he could carry on his experiments with plants all the year round. Burbank's home in Santa Rosa is a little white frame cottage, covered from cellar to roof with masses of flowering vines. Neat hedges border his paths and great handsome palm trees shade the green lawn. At the left of the house is a small greenhouse, and beyond that, in trim rows and neat board-bordered beds, are samples of many plants. In this cosy and modest little home lives the wizard with his aged mother.

Several miles from Santa Rosa, Burbank has a large farm, and it is here he conducts his most interesting experiments. One of the best known of his productions is the beautiful shasta daisy. To get this flower in all its perfection he grew thousands of plants and selected every year the best ones; he combined the wild daisy of the East with one from Europe and one from Japan, and as a result we have this sturdy

flower, nearly four inches across, white with a yellow eye and several rows of rays. Our wizard has improved plums, too, until now he has several wonderful varieties, and he has trees bearing stoneless prune plums. The kernel or nut is still there, but no stone. Then there is the plum-cot, a cross between a plum and apricot, which is a very delicious fruit. He has introduced some very fine peaches, some new varieties of apples, and many better and larger kinds of strawberries, raspberries, etc. In his orchard may be seen the curious sight of one tree bearing several different varieties of fruits, such as apples, pears, plums, etc. By grafting the branch of a new little tree into the stem of an old one he obtains fruit much sooner than he would if he allowed the young tree to mature alone.

Perhaps you would like to hear how some of this wonderful work is done. If Burbank is experimenting with a plum tree, he pulls off all the buds that for any reason look defective; then before the buds open he clips off the petals, so that no bees may be attracted to the tree, or being attracted, find a foothold. The flowers from an apricot tree have been picked and dried, and the pollen is collected from them and dusted across the pistil of the plum blossom. The fruit from this flower is allowed to go to seed, the seed planted, and the new little plant carefully examined to see if it is worthy; if not, the tree goes through the same process again, or perhaps a different pollen is applied next season. Sometimes the pollen from several different flowers is applied to one, and then it is not until the new little plant comes up that the wizard knows which pollen made the flowers grow. Fruit trees are grafted by cutting off a branch and inserting the cut end in a slit in another tree. In a short time the sap from the main trunk is nourishing the new branch, and it does not feel its transplanting.

Burbank has made experiments among all kinds of plants and trees, flowers, wild and cultivated, fruit and vegetables. For many years he has been trying to grow a cactus without spines. He has been successful in getting such a plant, but unfortunately the second year it reverts—that is, goes back to its old prickly state. A spineless cactus would be the best of food for animals, and indeed for man, as it is a fleshy plant and will grow with no water and in the most arid and sandy soil. Burbank's experiments with flowers have been most successful, but particularly with lilies with which other florists have experienced great difficulties. He says in his book, "New Creations": "Can my thoughts be imagined after sixteen years of patient care and labor, as walking among my new lilies on a dewy morning I look upon these new forms of beauty on, which other eyes have never gazed? Here a plant six feet high, with yellow flowers; beside it, one only six inches high, with dark red flowers; and further on, one of pale straw or snowy white, or with curious dots or shadings; some deliciously fragrant, others delicately so; some with upright, others with nodding flowers; some with dark green woolly leaves in whorls, or with polished light green, lance-like, scattered leaves."

The Carnegie Institution has acknowledged the world's debt to this great garden wizard by granting him \$10,000 a year to enable him to collect all the information possible about the wonderful work he has done and put this information into such form that people in generations to come may profit by what he, with patient work, has discovered about our garden and forest friends.

While armies devastate the world, while thousands live and die pursuing money and vain ambition, this gentle, quiet little man continues on his way making the world more beautiful every year with the magic wand of his cunning fingers, his patient heart, and clever brain.

SCHOOL NEWS

A letter recently received from Mr. R. A. B. Walton, of Glenlyon, Man., tells of a concert given by the pupils of Clearview S.D. on Christmas Eve. The children gave up their Christmas tree and prizes, prepared the programme themselves, and arranged with their friends to pay all expenses and to provide refreshments. The proceeds of the concert, seventeen dollars, were handed to the Red Cross Fund.

WHAT THEY SAY ABOUT US

Westbourne, Man.,

I wish to express my appreciation of your paper, the last number of which, with its many practical points, was especially helpful, giving me new ideas for the new year. Charlotte Lambert.

"I find the Journal very helpful in many ways, and always read the 'Children's Page' to my pupils."—R. A. B. Walton, Glenlyon, Man.



HOME STUDY

The Arts Course may be taken by correspondence, but students desiring to graduate must attend one session.

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Department of Education

MANITOBA

JUNE EXAMINATIONS.

Full particulars as to the dates and applications will be given in the April Bulletin.

FREE TEXTS.

The Royal Atlas and the MacMillan's Arithmetics are now out of stock. The Arithmetics are being revised, and none will be distributed until the Revised Edition is ready. It is expected that the new books will be ready for distribution when the schools re-open in August.

The Atlas will not be re-printed until after the war.

THE MODERN PHONIC PRIMER.

This Primer has been added to the list of free texts. It is an excellent book for beginners, and copies will be ready for distribution after the Easter Holidays.

TEACHERS' REGISTER.

There are still a number of Teachers in the Province who have not yet advised the Department of their location, as required by the School Act—Section 156, Sub-section (m). The Departmental Bulletin is now mailed direct to the teachers, and if their names are not on the records, it cannot of course reach them.

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Science Apparatus and the European War

As all Science Teachers are aware, Germany has for years been the largest manufacturer of Science Apparatus, particularly Glassware and Chemicals. The War in Europe has thus entirely cut off the chief source of supply for such materials, causing a temporary shortage.

While it will be some time before everything can be satisfactorily replaced—in fact, some articles may never be—you will be pleased to know that we are manufacturing a considerable number of lines right in Toronto, and have located firms in other countries who can supply Apparatus of a quality suitable for use in Canadian Educational Institutions.

We are, therefore, in a position to take care of your requirements, and shall be glad to receive your orders or to furnish quotations. You are assured of prompt and careful attention to your orders, and the utmost consideration in regard to prices.

Make up a list of the equipment you wish to obtain, and give us an opportunity of proving our service. If you have not yet obtained our 1914 Catalogue of Physical, Chemical and Biological Apparatus, write for a copy at once.

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