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The Educational Review.

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A Resolve for the New Year.

To keep my health! To do my work! To live!
To see to it I grow and gain and give!
Never to look behind me for an hour!
To wait in weakness, and to walk in power:
But always fronting onward to the light,
Always and always facing toward the right.

—*Charlotte P. Stetson.*

"THUS, the REVIEW carries good influence into British Columbia—the far-away province of the Dominion," writes a correspondent a few weeks since, referring to an extract from this paper which had helped to decide the choice of a school board.

MESSRS. J. & A. McMILLAN, the well known publishers of St. John, whose loss by fire was mentioned in last month's REVIEW, have again resumed work with their accustomed energy. Although their offices, salesroom, book-bindery and printing establishment are spread over the city at different places, they have been receiving and filling orders with almost their usual promptness. They hope to occupy their old premises about the first of May.

"IN Manitoba salaries have gone up from fifteen per cent to thirty-three per cent in two years. This has largely resulted from the scarcity of teachers." So we read in an exchange. This rapid increase of salaries in the West has drawn many of our best teachers from the East. Teachers are becoming scarce here, and yet salaries have not increased appreciably. Are our best teachers to be taken from us through lack of sufficient salary and our educational interests thus suffer?

DR. J. GEORGE HODGINS, librarian and historiographer of the Ontario education department, recently completed his sixtieth year of service in that department. He was associated with the late Dr. Ryerson in establishing the common school system of Ontario. He is still a worker, and engaged in completing the twelfth volume of the Documentary History of Education in Upper Canada. The REVIEW joins with hosts of friends in extending its hearty congratulations to Dr. Hodgins, the nestor of education in Ontario.

IF the new year finds us with health, strength and hopefulness, it is more than half the battle. Profiting by the successes and failures of past years, let us think more of the successes. Let us strive to forget the poor record that some of our pupils have made, and think only of their good achievements, and that they are capable of doing still better this year. There is no use in trying to make things worse and that is what we do when we dwell upon our discouragements and failures. Let us forget such things, look forward hopefully, and find better and still better things to do.

A WRITER in the *Canadian Magazine* for January makes a contribution to fish stories, if not to science, in commenting on the article in the October REVIEW where a contributor tells of seeing earth worms by the hundred lying on the top of the snow. The story is a good one; but the writer is evidently not a scientific angler. He still uses the old-fashioned worm for bait.

"I love the clear, cold air of winter," said a teacher the other day. "We can accomplish so much more at this season, because every one feels like work." That is true; and yet many, especially women teachers, dread this season. They would not, if they made it their practice, as it is their duty, to take constant daily exercise in the open air, no matter how rough and cold the day may be. If the snow is too deep for walking, get a pair of snowshoes and tramp triumphantly over the top of it. Organize snow-shoeing parties, enter into as many out-door games as possible and you will enjoy them, and be able to snap your fingers at the imaginary dread of winter, and at the same time accomplish more within doors. What a spirited example we have in Chief Superintendent of Education Dr. Inch and Alexander Gibson, the one three score and ten and the other four score years, joining a curling club this winter, and practising that wholesome game!

The Heavens in January.

The clear skies of January will tempt many an observer to forget the sharp wintry air and take frequent glances at the wonders overhead, now more brilliant than at any other time of year. Early in the evening the two planets, Jupiter and Venus, nearly equal in brightness, are visible soon after sunset. But as the month advances Venus rises higher and higher in the heavens, and increases in brightness over her rival. Those who watched her in late December and saw how rapidly she passed the slower planet, Saturn, will realize the apparent quickness of her motion eastward. This motion may be observed throughout the month by comparison with some near-by stars. Jupiter is also moving eastward, though more slowly, and his rate of motion may also be seen by comparison with the stars near him. What an interesting object-lesson on planets this will be during the month. While these, with the fixed stars, are seen to move apparently westward in rapid procession every evening on account of the diurnal motion of the earth, their own movements among the fixed stars may be easily traced from evening to evening.

This is one way the observer has of telling a planet from a fixed star; another way is that a planet shines with a more steady light like the moon. Why? How do we account for the twinkling light of the stars? Is the motion of a planet always eastward, like that of Jupiter and Venus at present? Give this as a problem to boys and girls. Some may never solve it; others only after years of observation; but all may become eager and reverent students of the heavens and solve many problems by themselves as they gaze.

Saturn is also evening star at present, and may be known by its steady yellowish light. Toward the last of the month it will draw nearer, apparently, to the sun and be gradually lost in his rays, to reappear as morning star in the spring months.

This problem of morning and evening stars (planets, not fixed stars, mind you!) is another well worth studying. How many people see and talk about the evening star and yet have no clear notions about it. A little observation and a few hours' careful study of an elementary book on astronomy would set them right for their lifetime; and the knowledge would add to their enjoyment of the natural world.

Mercury, which appears to move about the sun like a pendulum in the morning and evening skies, is morning star this month. He reaches his greatest distance from the sun on the 22nd, and for some days before and after that date may be seen in the east before sunrise. He shines in the early twilight with pinkish light, and is about the size of a second magnitude star. After watching him for a few mornings one may realize the aptness of the name "Mercury" applied to this planet.

Mars, our nearest neighbor, is morning star during the month, rising about one o'clock a. m. on the 15th. It is now very small, but during the summer will be much larger. In May he will be in opposition to the sun, and will then be conspicuous in his ruddy light, rising in the east while the sun is setting in the west.

The moon, the nearest planet to the earth, will be at its full on the 20th of the month. A writer has recently spoken of "the lugubrious and unmistakable masculine countenance which the full moon shows." To offset this and to show the right of the moon to be spoken of in the feminine, let any of our readers take a small field or opera glass and look at the full moon. A steady gaze will reveal the

fine profile of a woman's face, turned toward the north, the head covered with a luxuriant growth of hair. This outline of a face and throat may be seen for several nights before and after the full moon.

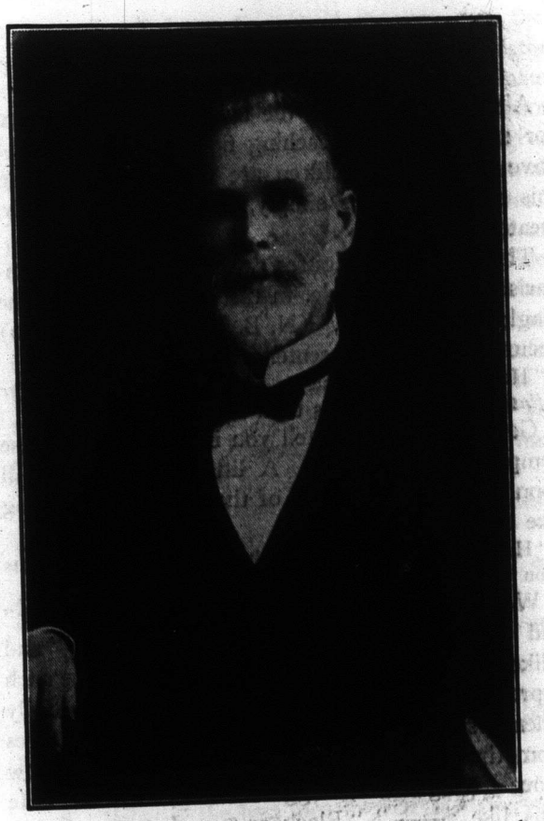
The average monthly pay of women teachers in the United States is $39.77. The highest is in Arizona, $71.75, but unfortunately there are few of them. California, $67.19. The lowest is in South Carolina, $23.20. Colorado, Illinois, Massachusetts, Montana, Nevada, New Jersey, New Mexico, Rhode Island each pay more than $50. Alabama, Maine, Mississippi, New Hampshire, North Carolina, South Carolina, Oklahoma, Vermont, and Virginia pay less than $30 per month. New Mexico alone pays men and women the same average wages.

A Teacher for Nearly Fifty Years.

There are too few examples in this country of men who have made teaching a life work and have through it laid by a sufficient competence for the maintenance and education of a family and for old age. Mr. John Montgomery, who recently resigned the principalship of the Albert school, St. John West, at the ripe age of nearly three score years and ten, has been a teacher for almost fifty years, and a very successful one.

He was born June 28th, 1835, near Ballymena, in the north of Ireland, a country that has given many talented and successful men to Canada in the past. After having received a good education in the national schools, he began to teach in 1855, and was employed for two terms of six months each at different intervals. Coming to St. John in the early summer of 1858 he proceeded to Nova Scotia, where he spent two and a half years teaching, part of the time as principal of the grammar school at Pugwash. Here he met the young lady who became his wife—Miss Catherine McKinnon.

In 1861 Mr. and Mrs. Montgomery came to St. John, where he began teaching in January, 1862, and he has remained here ever since. In the summer of that year he took charge of the superior school in Carleton, on the west side of St. John harbor, and for forty-three years he has taught continuously in that portion of the city, losing in that period only ten days, up to the time—a few weeks since—when he was prostrated by the illness which now confines him to his home. The St. John Board of School Trustees has placed on record its appreciation of his long and faithful services; and the teachers' association of the city has sent him an address expressive of the esteem in which he is held by his fellow teachers.



In his best days there were few teachers equal to Mr. Montgomery in the gift of inspiring pupils to effort. In this he set a worthy example, devoting his spare moments to self-improvement. He read widely and was a devoted student in many branches of learning. Many of his pupils to-day fill honorable positions, not only in the city of St. John, but in different walks of life throughout the continent, and they entertain for him a warm feeling of respect and affection. His present severe illness has brought forth from these many expressions of regret and the hope that he may live to spend his declining years in comfort.

In his private life, Mr. Montgomery is an exemplary citizen, and has been especially happy in his family relations. He has been careful to send his children out into the world with an excellent education. One of these, his only surviving daughter, is the wife of a successful physician at Moncton; his eldest son fills an important position in the railway postal service in St. John; two sons are in New York, one the director of a bank, enjoying the confidence of his associates and the directors, the other a rising physician; another is a leading dentist in Boston, while the youngest recently completed a course in the same profession.

English in the Lower Grades.

By Eleanor Robinson.

A teacher in one of the lower grades has asked for some hints on teaching figures of speech. I have found that children are readily interested in this subject if it is simply, and not too formally, treated.

The commonest figures are those based on comparison. For example, in the description of "The Eagle and the Swan," (N. B. Reader, No. 3, p. 32) occurs the following sentence:

"He glides through the air *like a falling star*, and, *like a flash of lightning*, darts upon the timid bird."

Get the children to tell you in what points these comparisons are true. A little questioning will soon produce a recasting of the sentence something like this:

"He glides *swiftly* through the air, and *suddenly* darts upon the timid bird."

Well, then, why did not the writer say "swiftly," and "suddenly," instead of "like a falling star," and "like a flash of lightning?" Do you ever use such expressions when you are talking, and especially when describing anything? Get as many examples from the children as you can. If they are slow about giving them, suggest some, such as "He runs like a——," "Black as ——," "She fought like a ——." Never mind if you do get a number of slang phrases, as, "To beat the band," and the like. They will serve as illustrations, and you had better wait for another opportunity to point the obvious moral, *i. e.*, that the frequent use of slang indicates a poverty of vocabulary and laziness in searching for the accurate word or phrase. By the time a dozen or more comparisons from ordinary conversation have been given, the pupils will probably be ready to tell you that we use them to express our thoughts more clearly, or more forcibly, or more attractively. Now look up some more examples in the readers. Byron's "Destruction of Sennacherib's Army," and Wordsworth's "Hart-Leap Well" furnish some simple comparisons. Let the children find the special point of comparison in each case, and express it in an adjective or adverb, as in the first example we took. Such comparisons as these are SIMILES, that is, the two objects compared are both named, and the comparison is formally stated, as in:

"The *sheen of their spears* was like *stars on the sea.*"

In METAPHOR, the comparison is implied rather than formally expressed. A good example of metaphor is found in Hawthorne's "Rill from the Town-Pump,"—"till the fearful deluge of fire-water burst upon the red men and swept the whole race away from the cold fountains." Here the effect of "fire-water" upon the Indians is compared in its destructiveness to that of the flood, but the comparison is not distinctly expressed. A little further on the fountain is spoken of as "the gem of the wilderness," and this is another metaphor; the corresponding simile would be "the fountain was *like* a gem." It is not necessary, however, to insist upon the children classifying the figures; what is important is that they shall see clearly the point, and the appropriateness of the comparison.

Not all expressed comparisons are similes. For instance, in "The Burial of Sir John Moore," the line,

"But he lay like a warrior taking his rest,"

is not called a simile, nor is the comparison in "St. Agnes' Eve,"

"My breath to heaven like vapor goes."

Nor are such expressions as "The man acted like a hero," or "The lion is as brave as the tiger." A little study of such sentences, together with the real similes, will draw from the pupils the conclusion that a simile compares two objects which are unlike in the main, but which have one strong point of resemblance.

The children will enjoy collecting comparisons, not only from their readers, but from story-books. Many good ones are to be found in the selections from Shakespeare and from the Psalms at the end of the Fourth Reader. "Cardinal Wolsey's Lament" furnishes some excellent examples for study.

Personification is an interesting figure of speech, and very common. It consists in speaking of inanimate objects as if they were living beings. There are three chief kinds of personification, exemplified in the following sentences:

1. "In the seaport of St. Malo 'twas a *smiling morn* in May."
2. "And the rills and rivers *sing with pride* the anthem of the free."
3. "O sleep! O gentle sleep!
Nature's soft nurse, how have I frighted thee."

In (1) the effect is produced by the use of an adjective; in (2) by the use of a verb; while in (3) an abstraction is spoken to as if it were a person. Personification and metaphor are often combined.

A form of expression much used by poets, and very delightful to study, is that which consists in

indicating time without directly naming it, whether it be hour of the day, or season of the year. In "Lady Clare," Tennyson says:

"It was the time when lilies blow,
And clouds are highest up in air."

And his poems are full of such pretty ways of dating events. The children can give examples of this manner of speech from conversation also; thus we say, "It was in strawberry time." "The day of the first snow-storm." "Just after the ice went out."

I have purposely refrained from giving a great number of examples of any of these forms, because they should not be studied apart from the context, and as an end in themselves. The children should be set to find out, first, how such expressions add to the force or beauty of narrative or description, and, second, how they resemble the expressions used in ordinary speech.

This number game may be used as an aid in quick addition. The children choose sides as in a spelling match. A number is written on the board —12—for instance.

The leader of the first side then gives any number below 12, as 8. The other leader then gives the number which added to 8 will make 12, as 4, and so on until all the combinations of 12 have been given. Another number is placed on the board and used until its combinations have been exhausted. Subtraction, multiplication and division may be treated in the same way and made as difficult or as easy as the grade requires. I have found this exercise very useful for rapid addition in second grade work.—*H. D., in The Primary School.*

Uncle Charles: "And how does Willie get along at school?"

Mrs. Young: "Splendidly! The teacher is so fond of him she keeps him after school almost every day."

The Teacher's Reading.

Read but few books.
Read the best books.
Read the books that help you most.
Read the same books many times.
Read for ideas more than facts.
Take notes while reading.
Commit to memory striking passages.
Make indexed scrap-books of gems read.

One hour of thoughtful reading each day will furnish food for meditation for all your leisure hours. Persist in this practice until it becomes a controlling habit. Read and study the lives of noted men until you have discovered the secret of their greatness and goodness. Read and study the history of a nation until you appreciate the people, measure the leaders and are able to comprehend the reasons why it helped or hindered the world's progress. Read and study one of the classics until you make your own the ideas of the author, see the pictures he paints, understand the characters he portrays, and think out to their legitimate conclusions the ideas expressed. Verify statements in science, by observation or experiment, if possible. Do not feel satisfied with understanding the words of the author. Master the thought, welcome the enthusiasm he inspires and follow out the ideas your reading suggests. Study and respect the opinions of others, but in the end stand by your own conclusions.

1. Write in a blank-book the complete titles of the books you read this year.
2. Write a short sketch of the author of each book read.
3. Mark the books you like best with crosses.
4. Why do you prefer these books?
5. In what ways have they helped you?
6. What friends have you made in the books read?
7. Why did you select them for friends?
8. What is the best idea in your favorite book?
9. What is the most important fact?
10. What is the choicest sentence?
11. How many times have you read the books marked with crosses?
12. Have you taken notes while reading?
13. Have you committed to memory striking passages?
14. Do you make some record of all the books you read?
15. What newspapers and magazines do you read regularly?
16. Do you put in a scrap-book the gems you read?
17. How much time do you spend each day in reading?
18. Do you consult reference books for information on matters you do not understand in your reading?
19. In what ways has your reading benefited you?
20. What books would you like to read next?

Reserve the first and second pages of the book in which you write answers to the above questions for answers to numbers 11, 12, 13, 14, 15, 16, 17, 18, 19 and 20.—*Supt. W. W. Stetson.*

The Review's Question Box.

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

H., QUEENS Co., N. S.—(1) Does iron pyrites always crystallize in cubes? (2) In the quartz of a neighboring gold mine I saw several different minerals in small specks or patches; I am sending you some to find out what they are. (3) To what geological age do these rocks belong?

(1) Iron pyrites does not always crystallize in cubes. All its crystalline forms, however, belong to the isometric system. The octagon and dodecahedron are very common crystal forms.

(2) The quartz specimens you send are very characteristic of our gold bearing quartz. The bluish color is due to little pieces of slate enclosed at the time of the vein formation. The brassy mineral in each of your specimens is iron pyrites, which in this case is massive—that is, not in crystals. The bronze colored patches are copper pyrites. The small piece of silvery-looking mineral is marcasite, or white iron pyrites. It is the same in composition as the brassy pyrites already noted. A similar looking mineral in the largest piece you send is arsenopyrite. The small cubes which look like lead are specks of galena.

(3) The southern half of Nova Scotia, which includes the gold-bearing rocks, is usually classed by geologists as Cambrian, while the north and east are largely Carboniferous. L. A. DEWOLFE.

A. D.—Please analyze particularly the subordinate clauses which are underlined, and parse the verbs *may live, go* and *would tread.*

1. (*a*) He *who fights and runs away* may live to fight another day.

(*b*) He said, *"I saw him go."*

(*c*) We thought *that the foe and the stranger would tread o'er his head.*

2. Is it a common thing to see the Bohemian Waxwing at this season of the year? I saw one on a mountain ash on December 19th. It remained around the tree nearly all the day.

3. In Meiklejohn's Short English Grammar, page 79: "Be struck! would be good in grammar, but bad in sense. Hence, Be healed! has been substituted." Please explain this a little more fully.

1. (*a*) "Who fights and (who) runs away" are attributive or adjective clauses qualifying the subject "he." "May live" is in the present conditional, meaning that it is possible to live (for the purpose of) fighting (on) another day.

(*b*) "I saw him go" is a substantive clause, object of "said." "Go" is a verbal substantive in the infinitive, equal to the noun "departure." "I saw his departure."

(*c*) The subordinate clause in this sentence is also a noun clause, object of "thought." "Would tread" is past conditional, meaning likelihood or possibility.

2. The Bohemian Waxwing is an exceedingly rare and irregular visitant to these regions. On the other hand, the Cedar Waxwing, or Cedar-bird, is very common, remaining here late in the season, and sometimes during the winter. It may have been the latter bird that was seen by our correspondent.

3. This occurs in the paradigm where the verb "strike" is conjugated in the passive voice. When the imperative is reached, the author thinks "Be (thou) struck" is "bad in sense," and substitutes "be healed."

A correspondent whose judgment may be relied upon suggests that it was Major-general Sir Charles Napier, not Lord Lansdowne as stated in last month's REVIEW, who sent the famous despatch to Queen Victoria—"Peccavi" (I have Scinde).

It is a wise plan to introduce the lesson on history, geography, reading, current events, or other subject, with some story or incident appropriate to the subject. The teacher and scholars should make clippings from the newspaper, or copy short extracts from magazines and books, and keep them in envelopes labelled "History," "Geography," "Current Events," or other topics where they can be used to advantage. These envelopes should be placed on the walls of the room where they are kept constantly in sight. The pupils will be interested in having a part in this, and you may nearly always depend upon their selections being good. Do not despise incidents with a spice of humor in them, if it is appropriate to the occasion. They tend to enliven a class, and prepare it for the more solid work that is to come.

The war in the East is always a topic of interest in schools. One teacher's plan is to place envelopes, labelled "Japan" and "Russia," on the walls, into which items and stories relating to this struggle and the history and geography of the two countries may be put.

A further extension of the Cape to Cairo railway, to a point 350 miles north of the Zambesi, has been decided upon.

Our Wild Animals in Winter.

How animals prepare for winter is an interesting subject for pupils at this season. The bear finds a cave or hollow tree into which he creeps and sleeps through the long winter. Moose, deer and caribou usually make a park for themselves in an unfrequented part of the wilderness, keeping the snow tramped with their feet as they move to and fro to browse on the young twigs and tender shoots. Some small animals burrow in the ground in summer and lay up a store of nuts for food for the coming winter. Their dwellings are lined with leaves and moss to keep them warm. Others, like the squirrel, have holes in hollow trees or beneath roots, from which they emerge to get food which they have stored up in the autumn in well known hiding places. Other small animals go about seeking their food, and their tracks may be seen on the snow. Can your pupils name any of these? The little birds that cannot burrow in the ground must have a hard time to get enough food this cold weather. Help them by throwing out crumbs on cold mornings. The best known example of active preparation for winter, says a writer in the *Woman's Home Companion,* is probably that of the beavers, which first make a pond by damming a stream and throwing the water back over land which was formerly dry. The beavers first cut down trees with their sharp, chisel-shaped incisor teeth, and float them down-stream to the point at which they wish to build the dam. Brush is also floated down, and with the addition of stones and mud the structure is made solid and waterproof. In the pond thus made the beavers erect stanch huts, chiefly of brush, with roofs well above the surface of the water, and doorways well below it. In these dwellings the little animals live all winter, from time to time swimming out under the ice in search of aquatic plants or the bark of trees and shrubs growing near the water. When this food fails or is unattainable the beavers fall back on the bark of birch and other saplings which they carried down to the bottom of the pond and stored away in or near their huts in the autumn.

While it is the duty of the patrons to visit the schoool and encourage teacher and pupils, it is no less the duty of the teacher to make the school an attractive and pleasant place to visit. Patrons who visit the school should feel that their time has been well spent. The teacher should not attempt to make a display simply to entertain the visitors, but the actual work of the school should be shown.—*Missouri School Journal.*

Bravery of School Boys.

Three lads in the Truro, N. S., Academy were recently awarded the honorary testimonial of the Royal Canadian Humane Association for bravery in rescuing a companion from drowning. The circumstance is thus recorded in the last number of the Truro Academy *Critic:*

On August 22nd, after heavy rains, four boys, Charlie Urquhart, Foster Archibald, and two smaller boys, were in swimming at the "brush heap" pool, Salmon River. While dressing, two other boys came down. One of them, Willie Cullen, was in first, and getting beyond his depth was carried into a whirlpool. Charlie Urquhart and Anson Hopper plunged in to his rescue, closely followed by Foster Archibald. Charlie Urquhart, although one of the best swimmers in Truro, arriving by the side of his drowning companion first, was carried under by the seething waters and his companion's frantic struggles. The other boys quickly came to his aid, and after a hard struggle, reached safety. Then after working hard for half an hour their companion was brought round and the tired boys went home feeling happy in the thought of having rescued a fellow-being from death. Mr. Cribb, an eye-witness of the boys' struggle with the seething waters, spoke highly of their bravery and presence of mind.

A great deal is said about the amount of material wealth in our forest trees, but very little about the wealth of natural beauty they give to mountain side and field and meadow.

The White Days of Winter.

The white days of winter, darling,
When softly the snowflakes fall,
Till a royal garment of ermine
Folds tenderly over all.
Field and hillock and valley,
Hushed in the sweetest sleep,
For the snow comes down from our Father,
His loving charge to keep.

Under the snow-robe, darling,
There is wonderful brooding heat,
That is taking care of the daisies,
And saving the next year's wheat.
And we'd have no flowers, dearest,
When the spring's green days come back,
If the white days did not bring us
The feathery flakes in their track.

—*Margaret Sangster.*

These winter nights against my window-frame
Nature with busy pencil draws designs,
Of ferns and blossoms and fine sprays of pines,
Oak-leaf and acorn and fantastic vines,
Which she will make when summer comes again.

—*Thomas B. Aldrich.*

Drawing for all Grades — No. II.

By F. G. Matthews, Truro, N. S.

As indicated in the introductory article, this series is intended to outline a combined course in ruler and freehand drawing. Before proceeding to freehand curves, two or three lessons with the ruler will be necessary. Interspersed with these, the freehand lessons should of course be kept up, by giving suitable exercises composed of straight lines as suggested last month.

Some teachers have an objection to the introduction of a ruler in connection with freehand drawing. If all the pupils of such teachers were born with a decided artistic tendency, the objection would probably hold good, but as such gifted pupils are usually in a very small proportion in an average class, any mechanical assistance is not only legitimate, but is to be commended. The use of the ruler will give children a better conception of straight lines and right angles, and these become their standards for comparisons with other lines and angles. Acquaintance with the ruler also gives a better idea of judging the lengths of lines and the sizes of objects, a faculty which many adults lack and would like to possess. Again, class work with the ruler is a great aid to mental calculation, and this alone should justify its inclusion. The teacher should be provided with a T-square, as a large straight edge is difficult to manipulate without assistance. The blade should be not less than three feet in length, and marked off in feet and inches. The children will require paper, pencils and rulers. The pencils for this work should be fairly hard, as clearer work and better lines can be obtained with them than with soft pencils. The rulers may be nine or twelve inches in length, bevelled at one edge, and should be divided into inches, halves and quarters. Smaller divisions are not required below Grade V, and are only confusing to the children. If possible, rulers with the lines marking the inches carried right across should be obtained. The reason for this will be apparent later. Before beginning to use the ruler, it is necessary that the children should understand the meaning of the marks on it. This may be made not only an instructive, but an exceedingly useful lesson to young children. The following will give some idea of such a lesson, but teachers will, of course, suit the questions to the class being taught, and if necessary make it a series of lessons.

Show a ruler. What is this? What is it for? What kind of lines can we draw with it? What do you see on one side of it? Are the marks all alike? How many long marks are there? How many parts do the long marks divide the ruler into? This question is very important, as it is a very common mistake even for older children to confuse the marks with the parts which they separate. It should be made clear by a sketch of the ruler on the blackboard, or, if necessary, a piece of paper may be marked like the ruler, and then cut in pieces at the marks, allowing the children to count the pieces. The lesson can then proceed. What do you see near the long marks? Read the figures. Explain that the figures show the number of parts into which the ruler is divided, and that each of these parts is an inch. If a foot ruler is being used, give the term foot, and show that the twelve inches make up a foot. Allow some of the children to measure various objects in the room, such as the desk, table, door, wall, etc. Now let the children place the ruler down the left hand edge of the paper, and opposite each inch mark place a point with the pencil. (Fig. 7). Next let them place the ruler

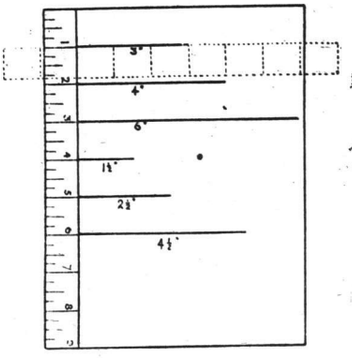


Fig. 7.

across the paper, in line with the top point, and as nearly as they can judge, parallel with the upper edge of the paper (see dotted lines in Fig. 7), and from the point draw a line, say, three inches long. From the next point, a line four inches, and from the next a line six inches may be drawn, the teacher passing quickly round the class to see that each child is correct. Care must here be taken that the pencil and ruler are held correctly. The ruler should be held firmly in position, with the fingers well spread, nearly in the centre of the ruler, never at the end. (Fig. 8). The pencil should be held sloping at an angle of about sixty degrees, with the point close in to the edge of the ruler touching the paper, so that the upper end of the pencil will be

pointing away from the pupil. It is needless to say that the pencils should be kept well pointed. In ruling the lines the pupil should always use the upper edge of the ruler, and draw from left to right (for a right-handed person), or from top to bottom.

Now return to the blackboard drawing of the ruler, and mark the half inches. How many parts have I divided each inch into? What would you call each part? How many half inches are there altogether on the ruler? The children may now be allowed to draw lines of 1½, 2½ and 4½ inches respectively for some other points on the paper. Next mark the quarter inches, and proceed in a similar manner.

The children should now be shown the method of joining two points. Place two points *a* and *b* on the blackboard, and place the point of the chalk on *b*. Bring the edge of the ruler against the point of the chalk, and, while holding the chalk firm, slide the other end of the ruler up until it reaches the point *a*. Transfer the chalk to *a*, and draw the line from *a* to *b*. This is rather a difficult operation for

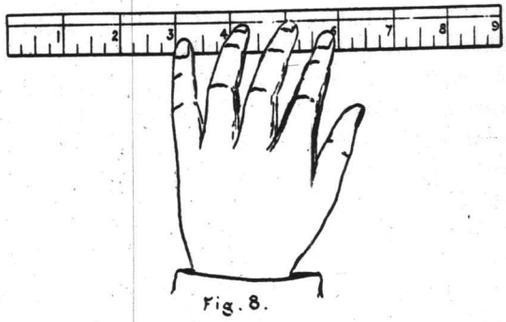


Fig. 8.

beginners, but if persevered with, a considerable amount of time and trouble will be saved later on, and more accurate drawing will be obtained. Care must be taken that the points are not covered up by the ruler, and that the points are sufficiently small to be covered up by the line when drawn.

At this stage it will be well to show that all lines drawn with the ruler are straight, whatever their direction may be, as children frequently get confused with the terms straight, level and upright. Lines may now be drawn in various directions, and of given lengths, by placing two points at given distances apart and joining them, thus combining the exercises before mentioned, and giving the children practice in holding the ruler in different positions.

"Do good to bird and beast."—*Kipling.*

"Pass to the Board."

Don't say to a class "Pass to the board quietly." If you are a successful disciplinarian you do not need this don't. But if you are only fair you may profit by it. When your first word of direction to the class is "pass" they will begin to pass. They are so pleased to pass that they do not care where or how they do it so long as they can get into motion. It is better to turn that command all about. Speak of quietness first, of the board second, and say "pass" when you wish them to move. It is a small matter—but it is worth thinking about.

It is better to say, "I wish you to see how still we can be in going to the board; stand; pass." Of course, it is far better to have such a spirit in your room that will make it unnecessary to mention quietness—they will be quiet without your speaking of it. But if you are only seventy-five in discipline you must speak of it. Here is the way one fine teacher does it at the beginning of the year: "Quietly (rising inflection and almost singing it, but very softly), ready, rise, to the board, pass."

Here is how another teacher (?) does it: "Now, children, we will take this on the board, and I want you to see how well you can do it. And I don't want any such confusion as we had this morning, either. It seems to me that you children ought to know better than make such disturbances when you know I want you to be quiet. James, put down that ruler. George, put that gum in the basket. I have told you a thousand times not to bring gum into school. No, that window is all right where it is. Never mind about the pencils now. Yes, I'll have that seat fixed when the carpenter comes to our school next time. Now let's have it still before we begin."—*Sel.*

The following are the answers to the questions in the "Christmas Holiday Game," December REVIEW:

1. Romeo and Juliet.
2. In a Hamlet.
3. As You Like It.
4. A Midsummer Night's Dream.
5. The Merchant of Venice.
6. Antony and Cleopatra.
7. Two Gentlemen of Verona.
8. The Merry Wives of Windsor.
9. Othello.
10. Much Ado About Nothing.
11. The Tempest.
12. Taming of the Shrew.
13. Julius Cæsar.
14. All's Well That Ends Well.

Our Common Winter Birds.

E. C. Allen, Yarmouth, N. S.

Perhaps the most familiar of the smaller winter birds is the English or European house sparrow (Passer domesticus); for since the introduction of these birds at New York in 1851, they have succeeded in establishing themselves in nearly every village and town in Eastern North America. Three characteristics of these birds common to both sexes are their heavy "John Bull" appearance, noisy disposition, and their love for the streets. They may be seen in the fall, however, about grain fields in such numbers that when they rise the beating of their wings produces a decided roar.

In color the female English sparrow somewhat resembles either our song sparrow or Savanna sparrow, but her upper parts are more gray, her breast unstreaked, and her body is stouter and much less finely proportioned than that of either of her American relatives. The male may be recognized by his gray crown and rump, white wing bars, and distinct black patch covering the middle of the throat and upper breast. The young males resemble the females.

Despite the abundance of these little "street gamins," as John Burroughs calls them, we have several small native birds which are very much in evidence during the winter. Who has not heard during the coldest winter weather about the pasture woods, in the road-side thickets, or from the ornamental trees of the town, that sharp "chick-a, chick-a-dee-dee," uttered by that little tuft of animated gray, black and white feathers, the chickadee (Parus atricapellus)? He may be known by the coal-black crown and throat separated by the white cheeks, and by the gray back and white underparts washed with buff on the sides, under the wings. The black crown has given this species the name black-capped chickadee, and the above characteristics, together with his habit of calling his name at all seasons to every passer-by, make him a very easy bird to identify.

While watching the black-caps, one should keep a lookout for another species about the same size, but with a dark brownish-gray, instead of a black cap, browner upper parts, and with much more and deeper brown on the sides. This is the Hudsonian chickadee (Parus hudsonicus), a more northern bird than the black-cap, and apparently much less common in Nova Scotia. The Hudsonian also calls "chickadee," but with rather a wheezy accent. The spring call of the chickadees at least the black-caps, is a sweet plaintive whistle of two or sometimes three notes, the first highest. Those who live in the woods usually translate this call "sweet-spring." Besides their calls, the chickadees have an exceedingly rich, low lisping bird-language, which has been beautifully compared to the "tinkling of icicles in the grass." Only a poet-naturalist like Thoreau would notice the comparison.

The chickadees are such cheerful, good-natured fellows that they are seldom seen in winter unaccompanied by other birds. Among their winter associates is the golden-crowned kinglet (Regulus satrapa). The diminutive size of this bird should make it easily recognizable, its length being little greater than that of the humming-bird. Some of its other marks of distinction are a high orange-yellow crowned patch margined with black, light line over the eye, dusky olive upper parts, soiled white under parts, and short notched tail. The yellow crown patch is readily seen when the bird is head downward, hunting for insects' eggs, larva, etc., by no means an uncommon position. The usual note is a fine, faint "chee chee," or "chee chee chee," half chirp, half whistle, and uttered almost constantly. The golden-crown seems to be uncommon in our woods in summer, at least about Yarmouth County, but if its song can be compared to that of the ruby-crowned kinglet, it would be worth a good deal of tramping to hear. While watching the kinglets and chickadees, one is likely to hear a thin nasal "yank, yank, yank." This is the "tin-horn" call of one of the two species described below, and may be compared to the distant quacking of a miniature duck.

White-breasted nuthatch (Sitta carolinensis).—Top of the head and the nape a shining black. General effect of the other upper parts blue gray. Under parts white, with the exception of a little brown under the tail. Somewhat larger than the chickadees.

Red-breasted nuthatch (Sitta canadensis).—Top of the head shining black, but with the black crown edged with a white stripe passing over the eye, this stripe being separated from the white throat by a black line running through the eye. (Note how different from the head of the white breast on which the black and white were in but two patches, black above and white below). The difference, with a rufous, instead of white breast and belly, and much smaller size, will readily distinguish the red-breast from its white-breasted cousin. Up to the present time I have found the red-breast more common in this locality.

Mineralogy—No. III.

L. A. DeWolfe, North Sydney, C. B.

Having become somewhat familiar with iron pyrites last month, it will be interesting to trace it through changes which lead to other and more valuable minerals. Iron and steel are obtained from magnetite, hematite, limonite, siderite and bog-iron ore. A study of these minerals and their origin, therefore, will be profitable not only for the present interest and pleasure of the pupil, but for the commercial value of such knowledge to the boys who are to be our future captains of industry. I am well aware that the few notes one may give in an article so limited as this will never make successful miners, prospectors or manufacturers of our school boys; but they may serve as an introduction to the subject, from which some boy will go on to further study, and attain success in the industrial world. Even if such an end be not accomplished, the awakening of the boy's interest to the details of the mineral world will make a more intelligent man of him.

The origin of beds of iron ore may be briefly given as follows: We may, for convenience, take iron pyrites as the starting point; though it itself doubtless came from pre-existing compounds. The pyrites, which we learned was iron sulphide (Fe Ss), readily oxidizes to iron sulphate ($FeSO_4$), which through chemical agencies turns to iron oxide (Fe_2O_3). This is the common form of iron which gives nearly all soils and rocks their red or rusty color.

In this state the iron is insoluble in pure water, but is soluble in water containing carbonic acid. One readily sees, therefore, that water containing decomposed vegetable matter, which supplies the carbonic acid, would, when percolating through the soil, or sandstone formed from soil, dissolve out much of the iron oxide and carry it away as iron carbonate. Now if this carbonate collect in a bog where there is an abundance of organic matter, it remains as carbonate; and, hence, we have beds of *Siderite* ($FeCO_3$). When iron is found associated with coal, it is nearly always in this form. (Why?) If, on the other hand, the carbonate be deposited so as to be exposed to air, it re-oxidizes to iron oxide (Fe_2O_3). This, when in cellular or earthy masses, and united with water, constitutes *bog-iron ore*. When changed to more compact form, but still retaining water, it is *limonite*. After the water has been driven off by physical agencies the mineral becomes *hematite* or *magnetite*. Have you not seen rusty ponds or pools where every blade of grass had adhering to it a spongy mass of iron rust? Can you not see how it got there, and, in imagination, see it at some future time buried beneath sand and clay, which themselves will become rock with a layer of iron ore beneath them? In the same way thick beds may accumulate, and, by successive filling with sediment, followed by periods of rest, successive beds of iron may occur alternating with beds of sandstone or other rock.

Thus all iron ore beds may be traced back to the disseminated iron particles in soils or sandstones, which in turn may be traced to iron pyrites. It has often been observed that in the vicinity of iron beds, sandstone is usually white or gray, showing that the iron has leached out of it; while in the vicinity of red sandstone extensive iron beds seldom exist. We are all familiar, too, with the fact that soil round the roots of trees is decolorized, showing that the vegetable matter has rendered the red iron soluble, so that it could wash away. Perhaps some one can tell us why soil under a black mud bog is usually white. Can you also tell why blue clay will make a red brick?

Now let us look at the distinguishing features of these minerals. Bog iron and limonite have the same composition ($Fe_2O_3+3H_2O$). They differ only in their texture: bog ore being more or less earthy or porous. Limonite is usually brown; often radiating or fibrous in structure. It is always distinguished by its brownish yellow streak. The earthy form is yellow ochre, so well known as a paint. If this ochre be heated, water escapes, and red ochre is left. Natural red ochre is the powder of hematite—a mineral easily recognized by this red streak and by its becoming magnetic when heated. In mass the mineral is red, or steel gray, or black. The black variety is specular iron, and looks much like magnetite,, but its red streak distinguishes it. A finer powder of hematite than red ochre is red chalk—common in red pencils. Hematite has the same composition as limonite, *minus* water. We saw above that heat drives off water from limonite, leaving hematite. It gets its name from the Greek word for blood, owing to its red powder. Is it harder than limonite?

Magnetite (Fe_3O_4) is black, heavy and magnetic, and has a black streak. It is the "loadstone" of the ancients, and gets its name from Magnesia, where it was found many centuries ago. All iron

ores become magnetic on heating; but this is the only one that has that property when cold.

Siderite ($FeCO_3$) does not resemble the other iron ores. It is usually grayish white or light brown, with a white streak. It has cleavage, and in some ways resembles dolomite; but its magnetism, when heated, shows it to be an iron.

None of these descriptions will mean anything unless you have the specimens in hand for study. Since the minerals are so abundant, however, both in Nova Scotia and New Brunswick, there is no good reason why anyone should be without them. When you get them, you will learn details that I cannot mention in this brief sketch. Magnetite is abundant in the North and Cobequid Mountains, and elsewhere. Limonite is mined at Londonderry; red hematite at Torbrook, Annapolis Co.; specular hematite is abundant in Pictou and Cape Breton. These are only a few of the many localities from which you could get specimens. In New Brunswick, Kings and St. John counties furnish these ores, but I am not acquainted with localities there.

A Barnyard Curiosity.

Any one who has taught in a school whose children live on treeless streets and are miles away from woods and fields, will be inclined to doubt whether in these respects the country school has not the best of the bargain. Not long ago in a school of two thousand children on the lower east side of the city of New York one of the teachers brought a hen and chickens to school for the benefit of her own class, none of whom had ever seen either a live fowl or a brood of chicks. With the consent of the principal the hen and her family were put in a barrel in the small garden in the rear of the school. It was arranged to have the entire school of two thousand children visit the back yard in squads of fifty each day for a week, each squad spending one-half hour in observation. It was found that not only had the children, with few exceptions, never seen a hen and chickens, but that many of the teachers had never seen them either. So ignorant were both teachers and children as to the proper treatment of the creatures they were observing, that the principal found it necessary to assign someone to supervise the observations in order that the chicks might not be poked to death.—*The Chatauquan for December.*

Concerning college football teams,
Too often it comes to pass,
The man who's halfback in the field
Is way back in his class. —*Pelican.*

Recollections of a Teacher.

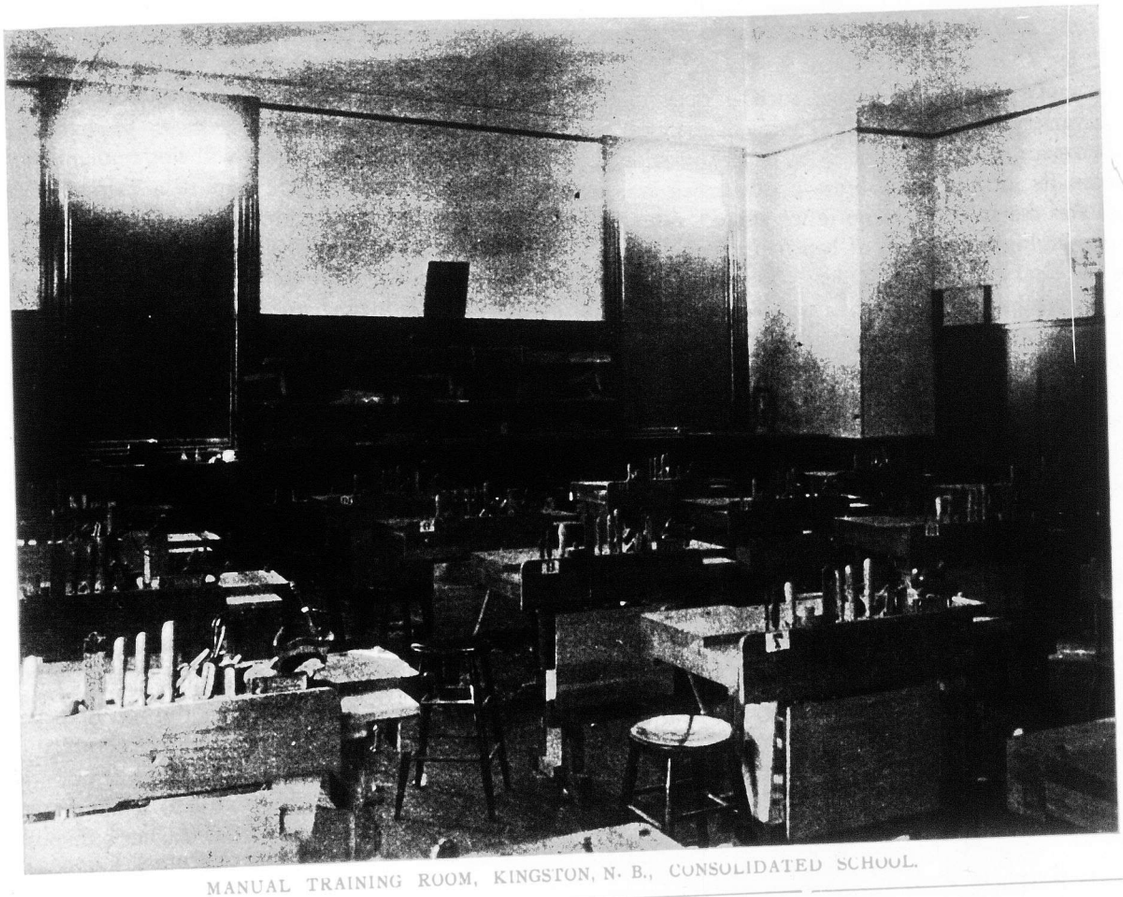
I have been a teacher for over thirty years. In my time, I have made incursions into many fields. Two particularly trying experiences recur to me. The first was at the University of New Brunswick, where my brother was, and still is, professor of chemistry and natural science. I think this was in 1872. At any rate, my brother had been called off to Vassar, to investigate an offer made him of a chair in that institution. I was visiting him at the time at Fredericton, and he asked me to take his classes in chemistry and physiology while he was absent. Although very much scared, I accepted, and for some three weeks worked harder than I ever have before or since. I was on my mettle, and determined at least to keep ahead of the class.

My young Canadians, many of them since distinguished, though full of life and fun, treated me with great consideration and kindness. I performed experiments, I fancy, never before nor since undertaken. I wonder that I did not wreck the class and the building. However, it seems I was casting bread upon the waters, for when, in 1900, the university celebrated its centennial, it honored me with a degree.

Another similar episode occurred when, at a girls' private school in Providence, sometime in the '70's, I was suddenly asked to teach English literature. I had been having the class in botany only. My protest that I knew nothing of the subject, though I had read widely, was of no avail. I took the class, but was never asked again to deviate from my chosen path. It has appeared to me that a statement and results, as my experience has led me to amend my ways, would be interesting to others of the teaching profession.

In the first place, I will mention self-reliance and confidence. These qualities only came after long years of struggle against shyness. Diffidence, I am now convinced, results from too great self-concentration. Pupils are not regarding the teacher nearly as much as he fears. Still, it does not do to lose control for a minute. I find that a few, long-separated acts of prompt discipline, accompanied by fairness and readiness to accept explanations, have brought their reward.

Next I would mention patience as a virtue, if not inherent (and it was not with me), to be striven for with prayer and fasting. To this day I am surprised at the snags over which pupils stumble. Sometimes I have thought I had marked them all. By no means; up will jog some impediment from



MANUAL TRAINING ROOM, KINGSTON, N. B., CONSOLIDATED SCHOOL.

the apparently calm-flowing stream, to wreck the frail shallop of the explorer. I have to put myself in his or her place and edge around the obstruction.

Lastly, though many other points occur to me, I will emphasize the importance of clearness of exposition. I have learned to avoid involution. Also, as time advances, I find it best to use only such technical terms as are absolutely necessary. Some of these are fundamental and must be employed, but there are many where plain English will suffice. If to these points I add, make nature the original teacher and subordinate the text-books, I think I have said enough.—*Professor W. W. Bailey.*

Estimated cost of the Panama canal, $200,000,000.

Length of canal, forty-six miles.

Canal width varies from 250 to 500 feet at the top, the bottom width being 150 feet.

Distance from New York to San Francisco by old route, 13,714 miles; by the route through the canal, 5,299 miles.

Distance saved in a sailing-trip around the world by the new route through the Panama canal, 2,768 miles.

Carleton County Teachers' Institute.

The twenty-seventh annual meeting of the Carleton County Teachers' Institute was held at Woodstock on Thursday and Friday, December 22nd and 23rd, Mr. Clinton H. Gray, president. Over ninety teachers were present, the largest attendance in the history of the institute, and the proceedings were marked with great interest. Inspector F. B. Meagher addressed the Institute on the bearing of the inspector's work in schools and on the advantages of consolidation, of which the county would have an object lesson in the new school to be established at Florenceville next fall. Mr. P. R. Hayward read a paper on Writing from a practical standpoint; Mr. W. M. Crawford one on Ferns; and a reading and language lesson was given by Miss Alexander. Mr. T. B. Kidner gave an address on Educational Handwork, illustrated by numerous drawings and sketches. This gave rise to an interesting discussion. The following are the officers for the current year: President, H. F. Perkins, Ph. B., Hartland; vice-president, Miss Evangeline Kinney, Bristol; secretary G. H. Harrison, Woodstock. Additional members of executive, W. M. Crawford, Debec; Miss Hattie Jameson, Richmond Corner.

Mental Arithmetic.

By F. H. Spinney, North Sydney, N. S.

No study affords the teacher such an opportunity for a variety of methods and choice of material as mathematics. Its usefulness is never questioned. Besides its utility as a branch of knowledge, it brightens the intellect as no other subject can. To secure the highest degree of benefit from this study, it is necessary to depart, at least occasionally, from the old established forms of "writing out." With me "occasionally" is very often. Let history, geography, grammar, etc., be written out, if need be; but let us not convert arithmetic into history, as is often done. Mental arithmetic is the only natural method. The lesson can be conducted in a variety of ways. I found the usual method of verbally stating questions to a class very tiresome; as it necessitated so much talking. It also required very enthusiastic talking to retain the attention of a large class. Accordingly, after much consideration of the subject, I resorted to a method, which, it is my purpose to outline here as briefly and clearly as possible, trusting that it may contain some helpful suggestions to teachers who find arithmetic not so interesting a subject as they might wish.

As simple interest affords the best opportunity for the use of this method, that very important class of problems deserves first consideration. Standing near the board, in front of the class, after explaining how people borrow money and why $100 is used as a "base," I put the following heading at the top of the board:

Principal. Rate per $100. Time. Interest

I do not use the term "rate per cent." until the third or fourth lesson. It is just as well to write "money borrowed" at first in the place of "principal;" then after a few lessons change it to "principal," and "rate per $100," to "rate per cent.," explaining how "rate per cent." means "rate per $100." Then, under these headings I place the number forming the questions, and ask for "hands up" after each question is put down. When the pupil gives the correct answer, that is placed under "interest." I start with very easy questions at first, so that all the class will attempt to answer. Here are some easy examples to start with:

Principal.	*Rate per $100.*	*Time.*	*Interest.*
$200	$5	1 yr.	?
$200	$5	3 yrs.	?
$300	$4	1 yr.	?
$400	$6	2 yrs.	?
$500	$6	3 yrs.	?

A great number of problems can be solved in this way in 5 or 10 minutes. After writing about 12 or more problems, I erase all the numbers in the "time" column, asking for a show of hands to replace them. As the pupils will not remember all the numbers erased, it will require a mental effort on their part to replace them; it will also suggest to them, without any help from the teacher, a method of finding the time when the principal, rate per cent., and interest are known. Then I add a few more thus:

Principal.	*Rate per $100.*	*Time.*	*Interest.*
$400	$5	?	$40
$500	$5	?	$75
$400	$4	?	$80

Then the "rate per $100" and principal can be found in a similar manner:

Principal.	*Rate per $100.*	*Time.*	*Interest.*
$500	?	3 yrs	$90
?	$5	4 yrs	$40

After giving many problems of this nature, I add some more difficult ones requiring the use of pencil and paper. This gives the pupil an opportunity of finding an original method for "writing out."

These lessons can be extended over a number of days, according to the time at the teacher's disposal for each lesson. This method has given better satisfaction by way of securing good attention and advancement than any method I have ever tried. It adds greatly to the interest to ask some pupil to make up some problems, and take his place at the board in the place of the teacher, putting down his problems, and receiving answers from the pupils in the same manner as outlined above.

A teacher can spend fifteen minutes, or more, on such a lesson, doing very little talking; thus making the lesson much more interesting than the usual method of mental arithmetic.

On some future occasion I shall deal in a similar manner with other classes of problems, also with rapid addition, which is a much neglected part of arithmetic.

She was a young teacher, but the children had caught her courage in facing difficult tasks. "Oh, but you mustn't say 'I can't,'" she would urge. "We'll all try, and I'll help you." Some times a disconsolate little voice forgot, and wailed out the forbidden word. Then the teacher would pass her hand over the child's forehead, "to rub out what the bad fairies had written," or she would turn to ask with a warm, coaxing smile, "What did you say?" And she never failed to change "I can't" to "I'll try." —*Selected.*

Joseph Howe's Memorial.

The one hundredth anniversary of the birth of Joseph Howe was celebrated in Halifax Tuesday December 13th, when a statue was unveiled to his memory. The statue has in large letters at its base the simple name Joseph Howe. Under is the following inscription:

JOURNALIST, ORATOR, POET, STATESMAN, PROPHET, PATRIOT, BRITON.

"I wish to live and die a British subject; but not a Briton only in name. Give me, give my country, the blessed privilege of her constitution and her law; let us be content with nothing less."

The great Nova Scotian died in Government House, Halifax, June 1st, 1873. He had been governor but a few months.

CURRENT EVENTS.

The international commission of inquiry into the North Sea incident has completed its organization, and will begin its work immediately.

More than a thousand miles of new railroads are now under construction in the Congo Free State, to connect the Upper Congo with the Nile and Zambesi valleys.

The minister of marine has made contracts with the Marconi company for two new wireless telegraph stations, one on the coast of Labrador and one at Point Rich, Newfoundland.

The Rumford medal of the Royal Society has been conferred upon Prof. Rutherford, of McGill, to whose investigations in radio-activity is due the new generally accepted theory that the atom is not the smallest possible division of matter. Prof. Rutherford is a native of New Zealand.

With the consent of the native chiefs, Great Britain has assumed control of the Tonga Islands. This group, otherwise known as the Friendly Islands, was discovered by Tasman in 1643, and lies about halfway between Samoa and Fiji. The inhabitants, though few in number, are the most advanced of the Polynesian race.

Britons and Boers mingled together at the funeral of former President Khuger, which took place in Pretoria on December 17th. An immense gathering of the people of both races followed his remains to their last resting place. By King Edward's special request a salute of twenty-one guns was fired as the coffin was lowered into the grave.

The British admiralty is designing a new battleship much more powerful than any other yet afloat or designed. It will fire a broadside of seven shells able to penetrate two feet of the best existing armor.

The Czar will not grant constitutional government at the request of the representatives of the zemstvos, it is believed; though he is expected to make certain reforms which will give the peasants larger rights and privileges than they have ever enjoyed in Russia.

The battle ships of the Russian Second Pacific squadron, on their way to the seat of war, have reached Madagascar.

The hydroscope is described as an extensible steel tube, with a complex system of lenses at the bottom, and an arrangement of mirrors within the tube for reflecting submarine views to an observing chamber at the top. A very clear picture of the sea bottom is thus produced.

The Indian National Congress, which met in Bombay in the last week of December, has a purpose somewhat similar to that of the recent meeting of the representatives of the zemstvos in Russia. Its delegates are chosen from all parts of India, and represent all classes and creeds. If its principles can be carried out, they will gradually lead to representative government in India.

A microscope of very long focus, a recent Italian invention, opens a new era in the study of nature. It magnifies more than twelve diameters at a distance of twenty inches; and by its use the undisturbed life of insects and other small animals may easily be observed.

Recent explorations strengthen the theory that certain ruins fround at Zambabwe, in Rhodesia, are those of the ancient city of Ophir, the chief source of the world's supply of gold in the days of King Solomon. An English explorer, Mr. Hall, has unearthed there three groups of temples and forts, occupying an area of three or four square miles. Well made gold ornaments, and many evidences of gold production have been found.

The French senate has ratified the colonial treaty with Great Britain, including cession of the shore rights in Newfoundland.

The Japanese war vessels, now relieved from their duties at Port Arthur, have gone southward to meet the Russian fleet.

A new substitute for nickel, called Patrick metal, has been placed upon the English market. It is silver-white, easily worked, and will not rust or tarnish.

The long and memorable siege of Port Arthur ended with the surrender of the fortress to the Japanese on the evening of January 2nd. Japan has now won by force of arms all that was demanded at the outbreak of the war. The fortress of Port Arthur, the great port of Dalny, and the whole of southern Manchuria are no longer Russian. The ships of Japan have undisputed control of all the waters of the Manchurian and Korean coast. But no one supposes that Russia will accept the situation and end the war. With her large army in the field south of Mukden, and her fleets on their way east, her rulers and her people will wish to continue the struggle, convinced that her great resources will enable her to win when those of Japan are exhausted. Japan is ready to negotiate for peace, it is believed; but it is doubtful whether, with an almost unbroken series of victories to her credit, she would propose terms that Russia could accept.

Fear is still felt of a general uprising of the natives in Africa, as a result of the fighting in German Southwest Africa.

Twenty-five thousand prisoners were taken by the Japanese at the surrender of Port Arthur. Before making the surrender, the Russians, as was expected, destroyed all the battleships in the harbor.

The new government steamer Montcalm, for use as an ice breaker on the river St. Lawrence, has proved that the river can be kept open so as to lengthen the season of navigation for about two months each year.

Complete anarchy reigns in the Tangier district of Morocco; but the Sultan of Morocco has cancelled his action of last month, by which he dismissed all foreign missions. This is a concession to the demands of the French government, and it is hoped that with French aid order will be soon restored.

A new apple which is both coreless and seedless is regarded as a great discovery in horticulture. Though not the first seedless apple that has appeared, it promises to be more valuable than its predecessors. A spineless cactus, of some considerable value as a forage crop, and, of course, fitted to grow luxuriantly on very dry soil, is another new development of much importance, as it promises greatly to extend the limits of agriculture in arid regions.

Quite as remarkable as the continued success of the Japanese in battle during the present war, and perhaps more unexpected, has been the success of the Russians in rapidly forwarding, over the Siberian railway, with its single track and comparatively light construction, the great numbers of men and great quantity of supplies that they have sent to the front. This success gives an added importance to the Russian military railway through Turkestan, the completion of which is just announced. By this new road, which is supposed to threaten British supremacy in India, large Russian armies could be quickly thrown into Afghanistan at any time, and it is not improbable that the reorganization of the Indian military system under Lord Kitchener has this possibility in view.

SCHOOL AND COLLEGE.

Mr. John Brittain, director of the Macdonald rural schools, will instruct classes in chemistry in the University of New Brunswick during the winter season.

Mr. Lynus Delbert Jones, who last term taught the Harvey, Albert County, superior school, has taken charge of the Milford, St. John County, superior school.

Miss Jane Brown, who has recently taken a course in the manual training school at Fredericton, has been engaged to teach this term in the Dalhousie superior school.

Mr. Chas. C. D. Richards, B. A., recently teacher at Fredericton Junction, has been appointed to a position on the staff of the Carleton County grammar school at Woodstock.

A very pretty Christmas cantata was given by the children of the public school at Hantsport, N. S., on the 20th December. It was under the management of the lady teachers and reflected high credit on their skill and ability.

Mr. John W. Clawson, a graduate of the University of New Brunswick, and more recently a graduate of Cambridge University, England, has been appointed instructor in astronomy at the University of New Brunswick this term.

At the instance of the Woman's Christian Temperance Union, Chief Superintendent Dr. Inch has sent to the teachers of New Brunswick a circular, asking them to do all in their power to stop the smoking of cigarettes among boys.

Principal D. W. Hamilton, of the consolidated school at Kingston, N. B., was married during the Christmas vacation to Miss Bertha A. Dayton, of St. Marys, York County. The REVIEW extends congratulations to the couple, and wishes them many happy years of wedded life.

The recent ceremony of laying the corner stone of the New Goldwin Smith Hall of Humanities at Cornell was a notable event in the history of the university. The venerable Goldwin Smith, now over eighty years old, delivered a vigorous and inspiring address, which began with these words, half earnest, half jest: "It is perhaps fortunate that the garrulity of age is limited by its feebleness." It is of interest to teachers to know that the education department of the university will have its rooms in this building.

Mr. A. E. G. McKenzie, A. B., principal of the Harkins Academy, Newcastle, has been appointed principal of the Albert school, St. John West, in place of Mr. John Montgomery, resigned. The REVIEW extends its hearty congratulations to Mr. McKenzie on his appointment and on his recent marriage to Miss Lottie Troy, an estimable teacher of Newcastle.

A conference was held at Moncton on the 28th December, at which representatives of the boards of education of Nova Scotia and New Brunswick attended, including Premier Murray, Hon. A. H. Comeau, Dr. A. H. MacKay, C. H. LaBillois, C. M. Leger, M. P. P., and Dr. J. R. Inch. The object was to consider the preparation of a series of text-books for the Acadian-French schools of the Maritime Provinces. It was decided to recommend to the government of each province the appointment of a committee, to whom should be entrusted the work of preparing the manuscript of four readers, under the direction of the superintendent of education for the three provinces. These readers, it is expected, will be ready for introduction in the schools in August, 1906.

BOOK REVIEWS.

JESS & Co. By J. J. B., author of "Wee Macgregor." Cloth. Pages 285. Illustrated. Price $1.25. The Copp Clark Co., Limited, Toronto.

One rises with satisfaction after the perusal of a book like this. It is healthy and entertaining. There are touches of genuine Scottish humour on almost every page, and the characters are all wholesome, "neebourly" bodies with whom it does one good to become acquainted. For genuine fun and refreshment commend us to a book like this.

A LADDER OF SWORDS: A tale of love, laughter and tears. By Gilbert Parker. Cloth. Pages 291. Illustrated. Price $1.60. The Copp Clark Co., Limited, Toronto.

The scene of this story is laid partly on the Island of Jersey and partly at the court of Queen Elizabeth. The latter is by far the more interesting portion of the book. There is not one incident that is commonplace. The characters are, most of them, well drawn, especially that of the Seigneur of Rozel, which is the most original, if not the best, in the book. Queen Elizabeth is well portrayed—her strength and weakness, her vanity and caprice, her wilfulness and obstinacy make up a character that if it is not true to the life, is certainly absorbing and full of interest. The author has not succeeded quite so well in depicting the Earl of Leicester—at least the character falls short of the masterly portrait in Scott's "Kenilworth," and so does the picture of court life in the time of Elizabeth. But the book throughout is one that absorbs the reader's attention from the beginning to the end.

THE PRISONER OF MADEMOISELLE: A Love Story of Acadia. By Charles G. D. Roberts. Cloth. Illustrated. Pages 265. Price $1.50. The Copp, Clark Co., Ltd., Toronto.

The plot of this story is original and well woven throughout. The characters are sprightly and entertaining. The hero is a young Boston lieutenant who is lost in the Bay of Fundy while on a semi-trading, semi-buccaneering voyage in the early days of Port Royal. Driven on shore near Cheticamp he becomes the prisoner of Mademoiselle de Biencourt, a dark-eyed Acadian damsel of noble birth. Love, adventure and hairbreath escapes finally lead to a happy denouement. The descriptions throughout of woodland scenery and denizens of the forest are not in Roberts' best style.

Sir Walter Scott's TALISMAN, with introduction and notes. Cloth. Pages 210. Price 2s. 6d. Macmillan & Company, London.

A beautifully bound volume, convenient, and in good large type.

Sir Walter Scott's WOODSTOCK. With introduction and notes. Cloth. Pages 747. Price 2s. 6d. Macmillan & Co., London.

This is a fine edition for the student and general reader of one of the best of Scott's novels. The notes and biographical sketch of the author will be found very useful.

EDUCATIONAL BROTH. By Frederic Allison Tupper, head master of the Brighton high school, Boston. Cloth. Pages 211. Price $1.50. C. W. Bardeen, Syracuse, N. Y.

A series of cleverly written sketches on current educational topics.

LITTLE FOLKS OF MANY LANDS. By Lulu Maude Chance, teacher in the first grade, public school, Riverside, Cal. Cloth. 112 pages. Illustrated. Price 45 cents. Ginn & Co., Boston.

It was a happy thought to provide such a book for young children's supplementary reading, and the thought has been happily carried out in the attractive little volume before us.

ELEMENTS OF BOTANY. By Joseph Y. Bergen. Cloth. 283+237 pages. Illustrated. Mailing price, $1.45. Ginn & Co., Boston.

This is a revision of Bergen's Elements of Botany which has been so widely used in American schools for several years past. The new edition is more compact, and contains the latest results of modern research, making it much more adapted to the wants of students, especially in cryptogamic botany.

OUR SCHOOLS: THEIR ADMINISTRATION AND THEIR SUPERVISION. By W. E. Chancellor, superintendent of schools, Bloomfield, N. J. Cloth. Pages 434. Price $1.50. D. C. Heath & Co., Boston.

The book is devoted to setting forth the status of school systems in villages and the smaller cities, and to the duties of the board of education, the superintendent, the principal, the supervisor, and the class teacher. The book is an intelligent guide for more effective work in schools.

Goethe's HERMANN AND DOROTHEA. Edited with introduction, notes, exercises and vocabulary by Philip Schuyler Allen, Assistant Professor of German Literature in the University of Chicago. Semi-flexible cloth. xlvii+257 pages. Illustrated. Mailing price, 65 cents. Ginn & Co., Boston.

Goethe wrote Hermann and Dorothea in the full maturity of his creative and artistic power. It is that one of all his works which in later years he could read with unalloyed satisfaction, and of which he never tired. This new edition of the famous masterpiece has been prepared with a view to its use in advanced high school work as well as by college classes.

THE HEROES, OR GREEK FAIRY TALES FOR MY CHILDREN. By Charles Kingsley. Cloth. Pages 208. Price 1s. Blackie & Son, London.

These ever delightful stories for children—Perseus, The Argonauts, Theseus—can with the greatest confidence be placed in every family and school library.

NATURE STUDIES (Plant Life). By G. F. Scott Elliot, lecturer on botany, Glasgow Technical College. Cloth. Pages 352. Price 3s. 6d. Blackie & Sons, London.

This book contains a very clear explanation of plant life, devoid of all but a few technical terms, and aiming to give to young people something of the value and pleasure to be derived from this study.

SCHOOL CIVICS. By Frank David Boynton, Superintendent of Schools, Ithaca, N. Y. Cloth. 368+xli pages. Mailing price $1.10. Ginn & Co., Boston.

The book is a simple, straightforward story of the origin and development of government, told in language easily comprehensible to pupils of advanced and high-school age.

Storm's IN ST. JÜRGEN. Edited with introduction, notes, vocabulary and English exercises by J. H. Beckmann, teacher of German in the Lincoln, Neb., high school. Semi-flexible cloth. Portrait. Mailing price, 40 cents. Ginn & Co., Boston.

Theodor Storm's "In St. Jürgen" is like a breath from one of his beloved northern moors. The tone of the story is sweet, although somewhat sad and melancholy, and cannot fail to hold the pupil's interest from beginning to end.

OBJECT LESSONS IN ELEMENTARY SCIENCE. Stage III. By Vincent T. Murché, F. R. G. S. Cloth. Pages 222. Price 2s. Macmillan & Company, London.

This third stage in the new and revised series of object lessons in science will be as useful to teachers as the previous stages referred to in last month's REVIEW. They are admirably adapted for the purpose of awakening attention to the common things of nature.

Gustav Freitag's DIE JOURNALISTEN. Edited with brief biographical introduction, notes, and complete vocabulary by Leigh R. Gregor, Lecturer on Modern Languages in McGill University, Montreal. Semi-flexible cloth. 231 pages. Portrait. Mailing price, 50 cents. Ginn & Co., Boston.

Die Journalisten is the best comedy which Germany has produced since "Minna von Barnhelm." It gives a picture of German political and social life about 1850, which in the main is applicable to the Germany of to-day.

ELIZABETH BARRETT BROWNING: Selections, edited with biographical and critical introduction and bibliographical and explanatory notes, by Elizabeth Lee. Semi-flexible cloth. xxix+173 pages. Portrait. Mailing price, 35 cents. Ginn & Co., Boston.

These selections introduce students of English literature to the work of the greatest British woman poet. The editor has chosen the particular poems included in the volume with the view of presenting something of all the more excellent sides of Mrs. Browning's genius.

ARITHMETIC. Book I. By D. Felmley and Geo. C. Shutts. Cloth. Pages 244. Price 35 cents. Rand, McNally & Co., Chicago.

A thoroughly practical treatise on primary arithmetic, attractively bound and illustrated.

FRENCH COMMERCIAL PRACTICE. By James Graham and Geo. A. S. Oliver. Cloth. Pages 233. Price 2s. 6d. Macmillan & Co., London.

In the December REVIEW we noticed a hand-book of German commercial practice, the first of a series published by Macmillan & Co., London, for commercial students and traders. The book named above is characteristic of the trading practice of France. In this country, where a knowledge of French is indispensable to so many, such a guide is necessary.

AN ELEMENTARY COURSE OF MATHEMATICS. By H. S. Hall, M. A., and F. H. Stevens, M. A. Cloth. Pages 385. Price 2s. 6d. Macmillan & Co., London.

The main purpose of this text-book is to provide in a single and inexpensive volume a short course of arithmetic, algebra and geometry, specially adapted to the needs of a large and increasing class of students, who wish to continue their training in mathematics after having received some knowledge of elements. The book is a most convenient and satisfactory one for the purpose.

ELEMENTS OF THE DIFFERENTIAL AND INTEGRAL CALCULUS, With Applications. By William Anthony Granville, instructor in mathematics in the Sheffield Scientific School, Yale University. 8vo. Semi-flexible cloth. Illustrated. Mailing price, $2.70. Ginn & Co. ,Boston.

This Calculus is the first volume issued of a series of standard text-books in mathematics, which is to be published by Ginn & Company. It is designed for the use of students in colleges and engineering schools. While its scope includes all that is usually given in the more extended first courses in the Calculus, yet the book is so arranged, topically and typographically, that any teacher can easily cut down the matter to meet the requirements of the shorter courses sometimes given.

Milton's AREOPAGITICA, with introduction and notes by H. B. Cotterill, M. A. Cloth. Pages 118. Price 2s. Macmillan & Co., London.

The present edition of this English classic is annotated with abundant notes and a full introduction containing data and explanations that will be appreciated by the busy student.

January Magazines.

The *Atlantic Monthly* Toastmaster opens the January number with A Readable Proposition, a hearty greeting to its readers, spiced with pleasant comment on the programme for the coming year. There are other interesting articles by leading men of letters; sketches and stories, poems and an entertaining Contributors' Club....In a rich cover with an open book design the January *Chautauquan* presents a number of articles on topics worthy of consideration in the new year of progress. There are several interesting articles on Germany; another on the changes in the common school system; and one on social progress in Europe since the French Revolution.....With a most attractive cover and a varied list of contents, including the latest news of the fashions and literary and domestic features of the greatest interest, *The Delineator* for January is an altogether excellent number. The regular fashion display is supplemented by a fine table of contents, embracing literary articles, treatment of domestic topics, etc....The last two numbers of *Littell's Living Age* have a series of articles as usual dealing with topics of social and national interest in England and on the continent. The story, Lychgate Hall, from the London *Times*, finished in the number for December 31, has been one that has absorbed the attention of readers....The *Canadian Magazine* for January has several articles of unusual interest, including one by Professor James Cappon on Chas. G. D. Roberts and the Influences of His Time. This is the beginning of a series of four papers on the Canadian poet. A new serial, The Builders, by Eric Bohn, is begun in this number, and promises to be a good story.