

THE EDUCATIONAL REVIEW.

FOR THE ATLANTIC PROVINCES OF CANADA.

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ST. JOHN, N. B., FEBRUARY, 1899.

WHOLE NUMBER, 141.

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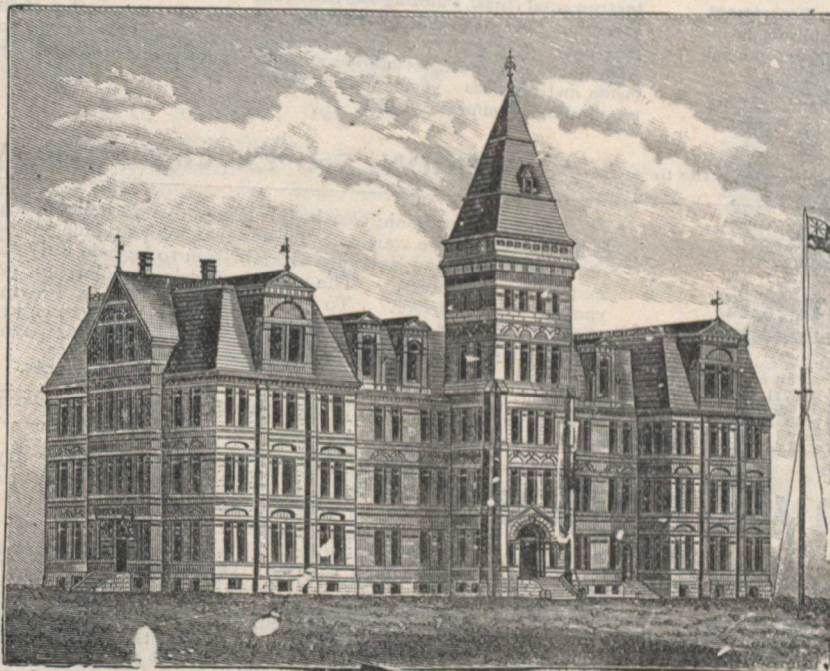
Session begins
September 1st,
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898.

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The Educational Review.

Devoted to Advanced Methods of Education and General Culture.

PUBLISHED MONTHLY.

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G. U. HAY,
Editor for New Brunswick.

A. McKAY,
Editor for Nova Scotia

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Always Read this Notice.

THE EDUCATIONAL REVIEW is published about the 10th of every month. If not received within a week after that date, write to the office.

The REVIEW is sent regularly to subscribers until notification is received to discontinue and all arrearages paid.

When you change your address, notify us at once, giving the old as well as the new address. This will save time and correspondence.

Beginning with February and March the number on the wrapper with your address tells to what whole number of the REVIEW the subscription is paid.

Address all correspondence and business communications to
EDUCATIONAL REVIEW,
St. John, N. B.

THE warm words of appreciation that frequently come to us from our readers make the task of publishing the REVIEW a very pleasant one. A valued subscriber says: "It is with deep regret that I will have to ask you to discontinue sending the REVIEW, after being a subscriber for over eight years and finding it a very great help in every department of school work. Indeed, I hardly think I could have got along without it, so anxiously did I look forward for each number. But as I intend leaving for ——— in a few weeks I will have to give it up. I wish the REVIEW every success in the future." When a subscriber treats the REVIEW so handsomely, we can only bow to the inevitable and extend our "heartiest congratulations and best wishes."

ANOTHER subscriber sends the REVIEW some interesting educational items for which we have not space in this number. We thank our correspondent and invite others to do the same. We want to hear from teachers

about their schools. Some are doing things differently from others and find their plans successful,—an excellent way of presenting some lesson or subject, a device to save labor or to get pupils interested in their work, some plan of enlisting the co-operation of parents. Let us have these, so that the three or four thousand teachers who read the REVIEW every month may share in what others have found to work so well. There is joy in giving. Try it.

AND yet another correspondent, and one whom we are glad to hear from, after a long silence writes: "I am glad to see such an improvement in the EDUCATIONAL REVIEW, and I have no doubt it will continue. How is it there is so little from Nova Scotia in its columns? Of course we Nova Scotia teachers are to blame in the matter." We give this question to other Nova Scotia teachers. Perhaps they will answer it the same way. If so, we would commend to them the practice of our correspondent, who immediately proceeds to tell us that "W. is rejoicing in a beautiful new school building, one of the finest, if not the finest, in the province. The two first flats contain twelve school-rooms. The library is on the first flat; a teachers' room and a fine large laboratory are on the second. . . . Excuse my writing at such a length, but we teachers find it hard to refrain from talking about our new building, and I knew you would be glad with us." We are glad; and feel sure that some account of the work done amid such surroundings would "point a moral, or adorn" the columns of the REVIEW on some future occasion.

ONE word more. A teacher writes: "I have given up teaching and no longer need the REVIEW." Another says: "I am about to undertake other duties, so please do not send your paper any more, as I have no use for it." (Occasionally such notification comes to us second hand,—through the postmaster or the inspector.) But are you quite convinced that the REVIEW will be of no service in your new life? Read this number carefully through, you who are about to assume other duties, and decide.

THE *New Brunswick Magazine* for February contains fresh instalments of the articles At Portland Point, by

Rev. W. O. Raymond, and *Our First Families*, by James Hannay; also a paper of more than usual local interest by I. Allen Jack, on *Old Times in Victoria Ward* (St. John). Dr. W. F. Ganong contributes a paper on Governor Thomas Carleton, and the editor, Mr. Reynolds, another on the *Cruise of the "Rechab."* The number is an excellent one and keeps pace with the steady growth in the interest and popularity of this magazine.

WE are obliged to hold over the answers to some questions in our *'Round Table Talks* to make room for an official announcement from Chief Superintendent Dr. Inch, which came to hand just as the last forms of the REVIEW were going to press. If the questioners wish it we will send them printed slips containing the answers.

THE Calendar of the Summer School of Science has been published, and may be obtained from the Secretary, Mr. J. D. Seaman, Charlottetown, P. E. I. The opportunities the school affords to secure abundant recreation amid some of the finest scenery in north-eastern America, and to come in contact with enthusiastic teachers and students of science and literature, should take many to the Restigouche next summer. It is not too soon to form plans, and to enter upon the courses of reading and study laid down in the calendar.

Vertical Writing.

The advantages of this system of penmanship are daily growing more apparent. The vertical style of writing has come into almost general use in the schools of the United States. There is no province in Canada, except New Brunswick, that has not at least placed it upon a parity with the sloping style. It is understood that in the finance department at Ottawa the clerks are required to acquire proficiency in its use. On the continent of Europe it has for some time been given the preference in German and Austrian schools, and elsewhere it is rapidly superseding the sloping style. In England the Department of Education (Whitehall) has declared that "the revisors of handwriting will place vertical writing on the same footing with other styles of writing." Henry Dwight Chapin, M.D., writing in the *Outlook* on "Hygiene for the School Boy and Girl," says: "A suitable position of the body, as well as the eye, is favored by employing the vertical rather than the slanting style of handwriting, and the paper or book should be parallel with the edge of the desk." Aside from the superiority of vertical penmanship as a system, from a hygienic standpoint, all medical men, who have given attention to the subject, agree that it is the best.

TALKS WITH TEACHERS.

It has been alleged that there is little or no national sentiment in Canada. It can not be doubted that patriotism has been neglected in our schools. It seems an effort on the part of many of our teachers to do any thing like justice to the teaching of the history of our own country. Pupils are generally found well posted in all the events of British History but not always in Canadian History, the knowledge of which too often consists of the French period rather than of the English, and especially of the time since Canada has been confederated. We may have been unfortunate in our text books. More probably the fault has been in the teaching. Our readers may lack Canadian sentiment, but where are we to get better ones? Only the most progressive of our teachers have as yet availed themselves of the information contained in the REVIEW Canadian History Leaflets or in the *New Brunswick Magazine*.

There are, however, signs of a change. The imperial idea seem to be abroad. More patriotic songs are now heard in the school rooms. Flags are now found in many school houses, though they are not always utilized to develop patriotism to the fullest extent. Pictures of Canadian battle scenes are beginning to appear. The imperial map of the world is becoming common and it is very much appreciated. The new imperial stamp has had a most potent influence upon all, especially the school children. May 23rd has been proclaimed Empire day in Ontario with the prospect that its example will be followed in the other provinces.

School libraries are doing a good work. Some of Parkman's works are in many of them and Roberts' Canadian History in not a few. The Board of Education, in the Province of New Brunswick, contributes to each school library "*Hannay's History of Acadia*" and the "*Life and Times of Sir Leonard Tilley*." They should also contain some of Gilbert Parker's works, especially that grand historical novel, "*The Seats of the Mighty*." Canadian writers of prose and verse are becoming known to fame, and our school libraries should be selected more generally from their productions. Instead of pictures of Washington, Lincoln and Garfield, so frequently seen in the homes in Canada, we should find Champlain, Wolfe, Brock or Lord Durham. The school is above every other agency the nursery of patriotism and its inculcation is a responsibility that rests upon the teachers.

There are a few changes or additions to New Brunswick school law which it may be well to mention for

the information of teachers. Trustees continue to hold office until their successors are appointed. Districts may vote money to convey pupils living at a distance, to school. Districts may vote to unite and provide for conveyance of pupils to a central school. Half the cost of the same will be borne from the provincial revenues. Third class teachers are debarred from teaching in districts having a valuation of \$15,000 or upwards. Except under certain conditions, widows are no longer exempted from school taxes.

FOR THE EDUCATIONAL REVIEW.

The Alumni Meeting of the University of New Brunswick.

It is an indication of increasing interest in the affairs of this university, not only that the Alumni Society is rapidly increasing in numbers, but that its members evince deeper interest in its meetings. The January meeting held in St. John was this year well attended, and many excellent suggestions arose out of a general discussion of the affairs of the institution. Chancellor Harrison was present and gave much information regarding the work of the past year; among other things, that the number of new students admitted was thirty-four. There are at present twenty-four teachers pursuing their studies at the university.

One of the speakers remarked upon the lack of sympathy that seemed to exist between the schools and the college, and expressed the opinion that its welfare depended more largely upon sympathy and co-operation there than in any other quarter. Another member of the society drew attention to the two matriculation examinations, conducted by different examiners and varying in requirements, that had been for some time existing. He argued that students would naturally prefer the less searching test given in September to the more difficult examination papers set in July, nearly three months earlier. He also spoke in favor of the July matriculation examination being adopted as the standard for admission for students of law, medicine and pharmacy, as by this means not only would a good standard of admission be provided, but the university would be brought in closer touch with these professions. The Chancellor, in reply, was able to show, for the past year at least, that a large majority of the matriculating class had entered after undergoing the July examinations. He further stated that the examinations for the county scholarships had been based for the past year upon the results of that examination. He failed to see any reason for any alleged hiatus between the schools and college.

The proposal that the law, medical and pharmaceutical societies should adopt the matriculation examination as the standard met the approval of several members. An opinion was expressed that all the members of the faculty should identify themselves more strongly with the aims of the schools, and should take more frequent opportunity of visiting them and becoming acquainted with prospective students.

Apropos of the idea of a lack of sympathy between the university and the schools, it might have been urged with justice that the present mode of electing the member of the senate from the teachers of the province is unfair and unjust. All teachers can vote, but only such teachers as are graduates of the university are eligible for the senate. The graduates of the university are a very small minority of the teachers, and they do not claim exceptional qualifications on any grounds. Strong resolutions have been passed by the Provincial Institute against this, and the REVIEW has from time to time raised its voice in favor of throwing open the election to the whole body of teachers. It is not a requirement that other members of the senate should be graduates, and several who compose that body at present are not. Is it not unjust and at the same time a narrow policy to insist that the member representing the teachers of the province must be a graduate?

The chancellor stated that there were at present twenty-four teachers attending the University. Whether or not this number is greater than at former times, it is certain the attendance of teachers has always been large, and equally so that many of the graduates teach for a shorter or longer time. Honorary degrees are conferred each year to a greater or less extent, and it may be enquired of the Senate and Alumni, how many of these have been conferred upon teachers engaged in active work? It is true honorary degrees have been conferred upon a teacher or two of private schools, who have prepared a few pupils for the college, but there are men and women who have for the last twenty-five years been preparing pupils in the same way, who have not been recognized. How many degrees have been conferred upon public school teachers?

Sympathy can not be expected to be entirely one-sided, and if the University acts in a liberal and fair spirit toward the teachers, it will be met more than half way.

ALUMNUS.

"Permit me to congratulate you on the excellent character of the REVIEW as a source of help and good influence in the working out of our public school systems. You deserve much credit, and I trust you will make progress in the future as in the past." O.

FOR THE REVIEW.]

English Literature in the Lower Grades.

TENNYSON'S MAY QUEEN.

From very early times it was the custom in England to welcome the coming of the month of May, with its pleasant weather, its blossoms, and all its sweet sounds, sights and smells, by certain ceremonies. One old writer tells us that as soon as May came, "Every parish, town and village, assembled themselves together, both men, women and children, old and young * * * and they go, some to the woods and groves, some to the hills and mountains, some to one place, some to another, where they spend all the night in pastimes; in the morning they return bringing with them buche, boughs and branches of trees to deck their assemblies withal." Many of our older poets, Chaucer and Shakespeare and others, speak of these pretty customs, and here we have our last great poet writing about how Mayday was sometimes kept in the villages of England. A tall pole wreathed with flowers and ribbons, would be set up in an open green space, and the young people would dance and play games around it. The prettiest girl, or the most popular one, was chosen as Queen of the May and crowned with flowers.

Notice what clear pictures of the springtime come before the sick girl, and how these pictures differ from the ones that we would call up in thinking of our springs. What trees and flowers do you think of when you picture the month of May?

Explain the line, "And the swallow 'ill come back again with summer o'er the wave."

What birds come to us in the Spring? Can you tell where you might see them, and what sounds they will make, as the poem does about the "building rook" and the "tufted plover."

Compare the pictures of early morning and evening in verses 6 and 7.

With what words does the phrase, "beneath the waning light" go?

What does "I thought to pass away" mean? Do you remember any other expressions that are used instead of "pass away"? Explain "though my lamp was lighted late."

Can you tell why the line "Wild flowers in the valley for other hands than mine" seems disconnected? Where does the last line of the poem come from?

The whole of the poem, as Tennyson wrote it, is not given here: if you will read it all in a copy of his works, you will find more pictures of the country life that the poet knew and loved; the truth and beauty of his writing about trees, flowers, birds, and all the

beauty of nature, are among his chief glories as a poet.

"We're made so that we love
First, when we see them painted,
Things we have passed
Perhaps a hundred times
Nor cared to see,"

and it is true also, that we may see a thing many times and not notice it, or care about it, till some poet who sees things more clearly, more rightly than other people, comes and shows us how to look at it.

In a pretty story, called "Cranford" which you must read when you are older, there is an anecdote about Tennyson that illustrates this. The young lady who is telling the story has gone out for a walk with a queer old gentleman whom she is visiting:

He walked before me with a stooping gait, his hands clasped behind him, and as some tree, or cloud, or glimpse at distant upland pastures struck him, he quoted poetry to himself; saying it out loud, in a grand sonorous voice, with just the emphasis that true feeling and appreciation give.

We came upon an old cedar tree which stood at one end of the house;

"More black than ash-buds in the front of March,
A cedar spread his dark-green layers of shade."

—Tennyson.

Capital term, "layers." Wonderful man!

I put in an assenting "Wonderful," though I knew nothing about it.

He turned sharp round. "Ay! you may say 'Wonderful!' Now, what color are ash-buds in March?"

Is-the man going mad? thought I. "What color are they, I say," repeated he vehemently.

"I am sure I don't know, sir;" said I with the meekness of ignorance.

"I knew you didn't. No more did I, an old fool that I am, till this young man comes and tells me. Black as ash-buds in March. And I've lived all my life in the country. Black! they are jet-black, madam."

ELEANOR ROBINSON.

Children always like a teacher who knows how to make them mind. They enjoy being under discipline which is firm, just, and constant, which respects neither age, clothes, nor names, but holds the entire school under the same just and reasonable law.—*Pacific School Advocate*.

The following five questions should be frequently asked by teachers in self-examination:—

"When a child, how did I behave at school?"

"Did I then understand at once everything the teacher said?"

"Did I love all my teachers?"

"If not, why not?"

"Did any of my teachers ever make a mistake?"—

Common School Educator.

The Connell Stamp.

EDITOR EDUCATIONAL REVIEW, ST. JOHN, N. B.

Dear Sir,—I am inclined to think that Dr. George Stewart has done an unintentional injustice to Hon. Charles Connell in his note on the Connell stamp. A good many years ago I was in Woodstock, where Mr. Connell lived, and knowing him well I chaffed him about the famous postage stamp. He told me that what he felt most keenly about the affair was the charge of vanity urged against him. His explanation was, as well as I can remember, that it was necessary, as New Brunswick had followed Canada in adopting the decimal system, to change the designations of the New Brunswick postage stamps. As postmaster-general he had to carry out the change. He accordingly went, I think he said to Baltimore, to make the needed arrangements. There were several denominations of stamps, and the design for each had been settled, excepting for the five cents stamp. Being obliged to return somewhat unexpectedly to New Brunswick before that design had been agreed upon, he urged the designer to give him something definite about it. The artist said if the matter was left to him he would let the postmaster-general have something that he thought would please the people. Mr. Connell in "a moment of weakness" agreed to the proposal and left for home. When the first consignment of stamps arrived he was more surprised than anybody else at the selection made by the artist, seeing that the stamp bore the head of the Postmaster-General himself. He had not time to change the design, so he let it go. The day for the first issue came, and with it came a storm of popular wrath which the Premier of the day allayed by the only course open to him, viz., by requesting and obtaining Mr. Connell's resignation.

While Mr. Connell was giving me this version of the trouble we were walking in front of his house. He said, "I have the stamps here, for I felt that it was only right that I should pay for them out of my own pocket." Taking me into a room he showed me a great pile of the stamps, and said, "I am going to burn them." Thinking that a souvenir would be a good thing to have, I asked him if he would let me have a few. He at once acceded to my request, and I put some of them into my pocketbook. Soon after I learned that he had destroyed his "little Klondyke." Philately had not then been heard of, or if it had already made a beginning, it must have been confined to a few individuals. At any rate there is no such word in Worcester's Dictionary of 1860, and the definition of "stamp collector" is one who collects the duties from stamps. Now, so general has become the practice of making collections of postage

stamps, that "stamp collector" is almost exclusively used to designate the amateur or professional philatelist.

Mr. Connell did not know what a mine of wealth he had under his hand in those bundles of stamps. I have heard of a genuine Connell stamp being sold as high as \$120.

I understood from him that a very few of these stamps had passed under the official stamp, but how many I do not recollect.

GEORGE JOHNSON.

Department of Agriculture, Ottawa, January 30th, 1899.

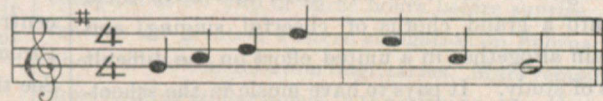
For the REVIEW]

Music Lessons in School.—III.

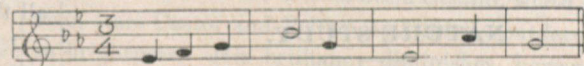
BY LUELLA E. BLANCH.

It is a good plan to have a change of scale every week. Write, for example, the scale of *D*, and use it as drill for a week. Next week substitute the scale of *F*, with its signature; *A* for the next, and perhaps *E^b* for the next, and so on, in any order the teacher chooses.

Grade III can easily be taught the relative values of notes and rests, and higher grades soon become accustomed to dotted ones. All this may be brought in to help the arithmetic, especially fractions. Then come the time-marks. Teach the children that $\frac{4}{4}$ means that there are four quarter-notes in a measure, and have them count the measures, accenting the first beat—thus: *one, two, three, four*; *one, two, three, four*, etc. Teach, also, $\frac{3}{4}$ time, using simple examples of both for illustrations; as



and



and similar exercises.

Physical exercises may also be brought to co-operate with the music. Use any breathing exercises that tend to strengthen the muscles of the chest, and add to the power of the lungs; especially those that require the breath to be slowly expelled. A good exercise for daily practice is to fill the lungs quickly with air, at the same time raising the arms, then expel the air, at the same time counting ten in a whisper, and allowing the arms to sink slowly to the side.

All this time rote songs are used as recreation, for in an ungraded school the teacher has not a great deal of time to spend on music, and will not be able to teach

sight-reading to any extent on account of the constant changes in her school. But if the little ones grow up with even so slight an idea of the great world of Art as we have endeavored to outline, we may rest assured that if the love of it be within them, their ears will be wide open to catch each new strain, and upon even so slight a foundation-stone there may be erected a noble structure.

Sing Softly.

We handle the seedling with exceeding care,—hide it from the scorching sun, shield it from the rising wind protect it from the heavy rain. With kindly heat, caressing breeze and gentle shower it grows a tree—strong, straight and branched in perfect symmetry. The voice of the child is to that of the man as is the seedling to the tree. Hide it from boisterous song, shield it from piercing screams, protect it from shouting chorus. In other words *conserve it*. In thoughtful song, tender utterance and limpid cadence it will grow at once sonorous, pure and flexible as the shades of feeling which agitate the singer's breast. Sing softly.—*Phila. Teacher.*

Music hath charms not only "to soothe the savage breast," but as well to quiet unruly members of many a boisterous school. Music in school never means a loss of time, as many teachers are wont to give as their excuse for not having more singing. It really means more time for the study of arithmetic, history, geography and every other study. Gather up the roving, straggling thoughts of the boys and girls, and have them united into a grand chorus of cheerful singing, and begin again altogether in a united effort on the difficult problems of study. It pays to have music in the school-room.—*Pennsylvania School Journal.*

NATURE STUDY.

Snow.

1. Why do we have snow in winter and not in mid-summer?
2. Where is snow formed?
3. Does it become cold or warm during a quiet snowfall? Why?
4. On a day when snow thaws is the air warm or cold? Why? (Thawing of snow is a cooling process to the air,—a taking in of heat and giving out of cold. The freezing of water vapor is a warming process, storing of cold and giving out of warmth).
5. Does the ground freeze deeper when bare or when snow-covered? Why?

6. Of what use is snow to fall-sown grain; to seeds, to shrubs, and to trees?

7. Why are houses sometimes banked with earth? Would snow answer as well?

8. Describe the construction of an Esquimau hut?

9. Where does snow remain longest in fields? Why?

10. Where does snow remain longest, in open land or in forest? Can you state what changes occur to a stream when its basin has been cleared of timber?

11. Why is snow found on high mountains?

12. What is the cause of snow-crust?

13. Why is it that snow sometimes drifts and at other times is evenly spread?

14. Why is snow whiter than water or ice? What is the color of powdered ice and water foam or spray?

15. The ancients believed that rock-crystal was formed from water which had had all of its liquidity squeezed out of it by long-continued and severe cold. Do you believe this?

16. When are snow-balls best made? What really occurs in the making of the compact ball?

17. Will a slight snow-fall remain longer upon the ground than on the sidewalk? Why?

18. What is a snow-line?

19. Make a summary of the good effects of snow. What harm is done by it?—*Selected.*

Hints in Physics.

Make a paper windmill by cutting a three-and-a-half-inch square of paper from the corners nearly to the centre, and fasten to a pointed stick by a pin passed through the centre, holding down every other corner. See that it turns very easily. Hold this mill over a lamp at different heights. It turns, and thus shows that there is a strong current upward. Study carefully all the air currents caused by the heat from the lamp.

1. Upward current over the lamp.
2. Currents at the ceiling moving away in all directions from over the lamp.
3. Downward currents around the sides of the room.
4. Currents moving toward the bottom of the lamp from all direction to push the warm air up.

Thorough study of circulation of air in the room will give clear ideas about winds.

1. Study the currents around a bonfire. The sparks show the course of the upward current.

2. Air is but slightly heated by the sun's rays. The sun heats the earth, and the earth warms the air.

With this in mind, study land and sea-breezes.

3. Show how the air at the equator is heated. What becomes of the heated air? The wind is upward at the

Zone of Calms. Why? The trades may easily be explained in this connection.

4. Currents of air in a room, around doors and windows, may be detected and studied by means of a lighted candle.

5. Chimneys keep the warm upward current from spreading; and it gains velocity in ascending just as a ball gains velocity in falling. Consequently, more air presses through the fire in the stove. Consider the use of very tall factory chimneys, lamp chimneys, etc.

6. Study the circulation of air in a room heated by a stove or radiator.

7. Why is most of the heat of an open fire wasted?

8. Make use of the principle given above to explain circulation of water in the ocean, Gulf stream, etc.

9. When liquids cool at the surface the cooled portion contracts and sinks.

10. Water is a poor conductor of heat, and if kept from circulating, as it is by the solid part of a pudding, it cools very slowly. Hence the time required to heat or cool puddings.

11. Some liquids, like molasses, are apt to burn when heated over hot stoves, because the heated part cannot be pushed out of the way by the cooler part before being heated too much.

Cover a thermometer with ice or snow. Notice that the thermometer remains at 32 degrees until all the ice has melted. Experiments very carefully made show that the temperature of ice just before melting and of the water just after are the same, regardless of the heat applied to melt the ice. When all the ice has been melted, the heat then raises the temperature of the water.

Study carefully and explain—

1. Why ice is put in the ice-pitcher in summer. (Air heats the water; and the water gives up its heat to melt the ice.)

2. Why ice is used in the refrigerator.

3. Why days in March are not so warm as days in September.

4. Why the snow does not all melt on the first warm days of spring.

5. Why the wax in the candle melts so slowly.—

Adapted from Phenix, in Journal of Education.

The Heavens in February.

In this month the great winter constellations which centre about Orion gradually shift their places to the western half of the sky, while less brilliant star companies, led by Leo and Virgo, occupy the east. At 10 o'clock p. m., in the middle of February, the Milky Way arches the sky in a nearly north and south line. The Great Dipper is high in the northeast and Cassiopeia low in the northwest.

Early in the evening Orion is on the meridian, and advantage should be taken of his favorable position for study of the beautiful star Betelgeuse, in the imaginary

giant's right shoulder. This star is remarkable both for its color, a rich topaz, and for its irregular variability. Ordinarily Betelgeuse is about twice as bright as Aldebaran, the leading star of Taurus, but, according to an estimate recently made at the Cape of Good Hope Observatory, it is, this winter, but slightly superior to Aldebaran. It may lose yet more of its light, and attentive observation may result in the discovery of some law governing its variability. That a sun of such presumably enormous magnitude as Betelgeuse possesses should lose, for a time, one-half its radiant power is a phenomenon calculated to arrest attention and excite wonder. Together with observations on its brightness as compared with Aldebaran and with its white neighbor Rigel in Orion's foot, the color of Betelgeuse should also be carefully watched. There is here an opportunity for amateur astronomers possessed of normal color vision to add something of value to the stock of astronomical knowledge. The colored stars present a fascinating but difficult problem, and a careful record of their hues, arranged on a simple chromatic scale, would be highly interesting and might prove highly important.

A hint of what can be done is conveyed by the fact that Betelgeuse and Aldebaran, although both are sometimes called red stars, have by no means the same color tone, while Antares, another red star, presents a still different tint.

THE PLANETS.

Mercury is a morning star, but it is too near the sun for observation. Venus is also a morning star, and conspicuous for two or three hours before sunrise. She reaches her greatest western elongation on February 10. She is in the constellation Sagittarius. Mars remains the most striking stellar object in the evening sky. He crosses the meridian about 10 o'clock in the middle of the month. He is in the constellation Gemini, south of the twin stars Castor and Pollux, and greatly outdoes them in brightness. His brilliancy diminishes, however, all through February, as the distance between him and the earth is widening at the rate of several hundred thousand miles in a day. Jupiter, in Libra, is an evening star, rising before midnight, and in the course of a few weeks will take the place of Mars as the planetary cynosure. Recent studies of his cloud belts indicate that the giant planet continues to be the scene of stupendous surface changes, which probably affect only the vapors that envelop his globe, but which give rise to a wonderful and beautiful spectacle in the telescope. Saturn is a morning star, rising several hours before daybreak, in the constellation Ophiuchus. Uranus is a morning star in Ophiuchus, five degrees almost directly north of Antares. Neptune is an evening star in Taurus.—*Garret P. Serviss in Scientific American.*

Thomas Kirkland, M. A.

At the meeting of the Dominion Educational Association held last August in Halifax, Thomas Kirkland, M. A., Principal of Toronto Normal School, was one of the most active and acceptable workers. He was appointed on the new board of directors and on several committees. To-day we have to record his death, which was a shock to us all and a great sorrow to hundreds who enjoyed and valued his friendship.

Principal Kirkland came to this country from Belfast, graduated from Toronto University with honors, and held the principalship of the Toronto Normal School for twenty-seven years.

Regarding his character and work, we heartily endorse the words of the Rev. Mr. Ballantyne, which we quote from the *Westminster*: "Beneath a quiet exterior and gentleness and composure of manner, there lay and was constantly in exercise in his work a steady, persistent energy and force of character which did not appear on the surface. He loved his profession, and was animated and guided by high ideals of its possibilities for doing good. Teaching, in his view of it, was above all, laying the foundation and building upon it of a true, strong and noble character, which again was to be reproduced by the teachers whom he taught in their pupils all over the land. To willingness to work and capacity for it, there were added such an amiability of disposition and kindness of manner, a patience hardly ever known to be ruffled, and such unselfish thoughtfulness for others as to make it a pleasure to be associated with him. No man who had to appear before the public could be more unobtrusive of himself. Although tolerant of the opinions of those who differed from him, and liberal and conciliatory in spirit, he was a man of strong and decided convictions concerning all matters in which he conceived principles of importance to be involved.

"His home life was one of almost ideal peace and happiness, and as husband, brother, friend, in all these relations it is but the bare, simple truth to say that the departed was a rare and model man. The noble profession to which he was an ornament and a strength has by the death of Mr. Kirkland suffered a great loss."

He was the author of a work on Statics, a work on Experimental Chemistry, and joint author of several mathematical works, among them Kirkland & Scott's Arithmetic.

Exercise in Spelling.

In a recent examination for teachers' license in New Brunswick, the following words were misspelled: Written, obedient, ventilating, discipline, vigilant, principles, intelligible, judgment, unforeseen, practice, interesting, too, meant, sympathetic, occasionally, attendance, multiplication, pleasant, preceding, extra, until, skilful, according, grouping, morals, learn, decided, misspelled, proceed, busy, sense, wilful, familiar, fourth, objectively, studied, monotonous, behaviour, whether, furniture, prepared, allotted, arising, separate, association, sentence, screech, beginners, swear.

In the same examination papers the word *learn* was almost invariably used in the sense of *teach*; as "I would *learn* them how to use," instead of "*teach* them how to use."

How to Increase Your Salary.

Some years ago a young lady was elected to a small town school employing five teachers. The board took her entirely on the recommendation of the principal. Her salary was \$350. It was soon evident that no mistake had been made in her election. She was small in stature, but very active. A visitor once remarked, "She can walk round the entire school-room in the time it takes some teachers to turn around." Her intense activity aroused similar energy in her pupils. Every one who visited her room found things going vigorously. Pupils liked her, parents liked her, principal liked her; and at the end of the year, when a reception was given to parents in the schoolroom, classes heard, work shown, the members of the board were delighted, and the comments of the visitors were favorable.

That evening the board met, and her salary was increased \$100. Any scheming on her part, do you think? Any private influence? Nothing whatever. She simply did superior work. She had come to the town a stranger at the opening of the term, and now she was given fifty dollars more than any lady teacher had ever received in that school before. A year later she was again advanced to \$475, then to \$500, and after three years at that salary she was given \$525.

Should she receive a more favorable offer elsewhere, the board would doubtless equal the salary offered, for she has become almost indispensable to the school and the town.

Another case occurred in the same state. In this school the maximum was \$500. The teacher began at \$400, and after four years reached the limit. Her work was so excellent that a few years later a prominent superintendent visited her school, and offered her \$550 with a possibility of at least \$700 in time. She consulted the board, who informally agreed to give her \$550 to stay. The superintendent now increased his offer to \$600. Again the board considered the case, and concluded that the interests of the town demanded her retention—they could not let her go for a consideration of merely fifty dollars; and so she was offered \$600 to stay, and she agreed.

It is not necessary to multiply instances. Despite all statements to the contrary, boards of education are generally willing to pay extraordinary wages for extraordinary work. The question with them usually is, Can we replace her with one as good as she is? If not, we will raise her salary if necessary to keep her.

The way, therefore, to raise your salary is to do superior work. Be active in the school-room. Read a few of the best educational papers regularly, and apply the good things you find. Always be self-contained and reasonable in your dealings with parents and scholars. Make yourself indispensable to the best interests of the school and of the community.—*H. C. Krebs in Primary Education.*

The Teacher of Literature.

Professor Klasovsky's first lesson was a revelation to us. He was to teach us Russian grammar; but, instead of the dull grammar lesson, we heard something quite different from what we expected. It was grammar; but here came in a comparison of an old Russian folklore expression with a line from Homer or from the Sanskrit Mahabharata, the beauty of which was rendered in Russian words; there, a verse from Schiller was introduced and was followed by a sarcastic remark about some modern society prejudice; then solid grammar again, and then some wide poetical or philosophical generalization.

Of course there was much in it that we did not understand, or of which we missed the deeper sense. But do not the bewitching powers of all studies lie in that they continually open up to us new, unsuspected horizons, not yet understood, which entice us to proceed further and further in the penetration of what appears in vague outlines only, at the first sight?

Our hands placed on one another's shoulders, some of us leaning across the tables of the first row, others standing close behind Klasovsky, our eyes glittering, we all hung on his lips. The more his voice fell, towards the end of the hour; the more breathlessly we listened. In most of the others something good and elevated glimmered at the bottom of their hearts, as if a vision of an unsuspected world was opening before them. Upon me Klasovsky had an immense influence which only grew with years.

In western Europe, and probably in America, that type of teacher—"the teacher of literature" is unknown; but in Russia there is not a man or woman of mark, in literature or political life, who does not owe the first impulse toward a higher development to his or her teacher of literature. Every school in the world ought to have such a teacher. Each teacher in a school has his own subject, and there is no link between the different subjects. Only the teacher of literature, guided by the general outlines of the programme, but left free to treat it as he likes, can bind together the separate historical and humanitarian sciences that are taught in a school; unify them by a broad philosophical and humane conception, and awaken higher ideas and inspiration in the brains and hearts of the young people. In Russia, that necessary task falls quite naturally upon the teacher of Russian literature. As he speaks of the development of the language, of the contents of the early epic poetry, of popular songs and music, and later on, of modern fiction, of the scientific, political and philosophical literature of his own country, and the divers æsthetic, political and philosophical currents it has reflected, he is bound to introduce that generalized conception of the development of human mind which lies beyond the scope of each of the subjects that are taught separately.—*From "The Autobiography of a Revolutionist," by P. Kropotkin, Atlantic Monthly, Dec. 1898.*

Language and Grammar.

Write the correct abbreviation of each of the following words: Sunday, Wednesday, September, Mister, postmaster, principal, superintendent, barrels, dozen, interest, month, number, postoffice, first, second, fourth.

Write the plurals of the following names: Tree, bird, wing, grasshopper, cricket, stick, stone, flower, meadow, potato, cargo, family, turkey, hawk, woman, gas, bench, tooth, knife, wolf, thief, plow, monkey, handkerchief, country, cherry, buoy.

Write the feminine forms of the following names: Lion, poet, prince, adventurer, actor, executor, testator, king, father, negro, emperor, duke, hero, widower, tiger.

Write sentences containing the following words used (1) as nouns, and (2) as verbs: Man, load, pass, work, play, hand, whip, heat, chain, stand, fly, rock, strap, point, milk, fan, iron, water, fire, sale.

Substitute a single word for each of the following metaphors: Earth's white mantle, the land of nod, the vale of tears, the staff of life, the king of the forest, the ship of the desert.

Which of the bracketed words is preferable: It tastes quite (strong, strongly) of cloves. He told them to sit (quiet, quietly) in their seats. They live just as (happy, happily) as before. The carriage rides (easy, easily). Your piano sounds (different, differently) from ours. Doesn't that field of wheat look (beautifully, beautiful)?

The plurals of some nouns differ in meaning from the singulars, as salt, salts. Give other illustrations.—*Selected.*

Snowballing.

Snowballing is one of the problems of a country school, but I know of an instance where a teacher called a meeting of the pupils, and, after putting before them the evils of snowballing, and the injuries often sustained by the younger pupils, who were not as well able to take care of themselves, a popular vote decided that no snowballs would be thrown, and the entire school acted accordingly. This was better than saying you must not throw snowballs.

Teachers must cease to be formidable and mechanical. Keep before the child the highest standard of discipline; not by preaching, but by asking them the question, "Is this the best that you can do for yourself and your boy friends?" High-mindedness, self-control, and courteous and unselfish natures for others will result, if our boys and girls are taught how to care for themselves and to care for their neighbors.—*S. L. Arnold in N. E. Journal of Education.*

Composite Declamation.

No school entertainment is perfectly successful unless the audience has been aroused to hearty laughter at least once. Nothing is more certain to do this than composite declamation, and nothing is easier to prepare. It differs from the well-known concert declamation in two respects, namely, the pupils recite different sections, and is infinitely more amusing.

Select "Lord Ullin's Daughter," "Barbara Frietchie," and "The Dutchman's Serenade." It is essential that the pieces be familiar to the audience, or they will be unable to follow each speaker and will thus lose half the fun. Choose three boys with good, strong voices, and

train each one separately on his special piece, making him exaggerate the gestures wildly and also the expression. Then have all three boys declaim simultaneously. Any person hearing them for the first time must have marvelous control of himself if he is not convulsed with laughter.

The effect is increased when a large audience is present. I have seen such an audience simply demoralized with laughter at these very selections thus declaimed together. It is irresistible. Coming in between tragic or classic performances, it affords wonderful relief to an audience.

"The Dutchman's Serenade" being the shortest, the boy reciting that will finish first. He must then stand in a very dignified manner till Lord Ullin's daughter has sunk beneath the wave; and when Barbara Frietchie's "work is o'er," all three boys bow gravely and leave the stage, followed by a perfect "storm of applause."—*C. M. Millington.*

HOME AND SCHOOL.

A Lesson from Real Life.

A young merchant, intent on business, while rushing across the city on his wheel met with a collision. The result was numerous bruises, sprains, and dislocations, which laid him aside from active duties for a few days. The mental currents, which had been rushing out along lines of business activity, were suddenly checked, and boiled and seethed in irritation and rebellion.

"It would not have been so hard," he said, "if I could have been let down easy, but this sudden stoppage from a point of intense activity to a state of enforced quiescence is almost unbearable."

One evening, while lying upon his sofa, he noticed that his little boy, a bright little fellow of four years, was remaining up after his usual bedtime, and, calling the nurse, he commanded her to take the child to bed. The little fellow resisted with kicks and screams, was scolded and slapped by his father into sullen quiescence, and carried off rebelliously to bed.

"I declare," said the father, "that child is getting to be incorrigible. I shall certainly have to take him severely in hand."

This remark was addressed to a friend, a woman of experience, who, sitting in the room, had been a witness to the proceeding. The comment of the father opened the way for the expression of thoughts which were still in her mind.

"Did you notice what the child was doing when you ordered him to bed?" she said.

"Why, no, not particularly. He was playing, I believe."

"He was very busy," said the friend. "He had a grocery store in one corner of the room, a telephone in another, and a magnificent train of cars with a coal-scuttle engine. He was taking orders from the telephone, doing up packages in the grocery store, and delivering them by train. He had just very courteously assured Mrs. Brown that she should surely have a pound of rice pudding and a bushel of baked potatoes, and had done up a pumpkin pie for Mrs. Smith, when he was rudely disturbed in his business by Sarah and carried ignominiously off to bed. He resented, and probably if he could have put his thoughts into words, would have said just what you did a short time ago, that if he could have been let down easy it wouldn't have been so hard, but to be stopped suddenly, right in the midst of business, was unbearable. Now he knows that to-morrow the grocery store will have been demolished, the telephone will have disappeared, the train will have been wrecked; and if he goes into business again, he will have to begin at the foundation. You think your experience is hard enough, but you know there are others at your place of business who are looking after things as well as they can. How would you feel if you knew that your store was demolished and had to be built up again from the foundation?"

"O, well," said the father, "but that is business. The boy was only playing."

"The boy's occupation to him was business just as much as yours is to you. His mental activities were just as intense; the sudden checking of his currents of thought was just as hard to bear; and his kicks and screams were no more censurable in him than have been your exclamations and frettings during the time that you have been ignominiously sent to bed. You have been worrying over plans that were suddenly confused because of your accident; he goes to bed feeling that Mrs. Brown will be disappointed because she did not get her rice pudding, and it is just as hard for him to bear this as for you to bear your experience."

"Well, what would you have me do?" said the father. "Would you let the child sit up all night because he is interested in his play?"

"No, but you might have 'let him down easy.' Suppose you had given him fifteen minutes in which to rearrange his thoughts. Suppose you had called him to you and said, 'Well, Mr. Grocer, I would like to give you some orders, but I see that it is about time for your store to close. I shall have to wait until to-morrow.' No doubt the little grocer would have been willing to have filled your orders at once, but you could have said, 'O, no; stores must close on time so that the clerks can go home. There will be plenty of time to-

tomorrow. I see you still have some goods to deliver, and your engineer is getting very anxious to reach the end of his run. In about fifteen minutes the engine must go into the round-house and the engineer must go home and go to bed so as to be ready for work to-morrow.' Do you not see that this would have turned the thoughts of the child into just the line that you wanted him to go? He would have been glad to close up his store, because that is the way men do; and as a little engineer at the end of a 'run,' he would have been very glad to go to bed and rest. Instead of a rebellious child, sobbing himself sulkily to sleep, with an indefinable feeling of injustice rankling in his heart, as a happy little engineer he would have gone willingly to bed, to think with loving-kindness of the father who had sympathized with him and helped him to close his day's labors satisfactorily."

"I see," said the father, "and I am ashamed of myself. If I could walk, I'd go to him and ask him to forgive me. Sarah, bring Robbie here."

"He's asleep," was the reply.

"Never mind, bring him anyhow."

The girl lifted the sleeping boy and carried him to his father's arms. The child's face was flushed and tear-stained, his little fists were clinched, and the long drawn, shuddering breath showed with what a perturbed spirit he had entered into sleep.

"Poor little chap!" said the father, penitently. He kissed the moist forehead and whispered, "Can you forgive your father, my boy?"

The child did not awaken, but his hands gently unclosed, his whole body relaxed, and nestling his head more closely against his father's breast, he raised one chubby hand and patted the father's cheek. It was as if the loving voice had penetrated through the incasing flesh to the child's spirit, and he had answered love with love.—*Mary Wood Allen, M. D., in New Crusade.*

The public school board of Toronto has abolished home study, except in cases where the parents of pupils desire its continuance. It has been found that for a large portion of the children of school age the hours of study in school are as long a time as can be profitably devoted to their tasks in the day without danger of injury to their health or growth. There is in this province a considerable division of opinion as to the necessity of school children being required to commit long tasks to memory at home. Those who do so are sometimes overtasked and in other cases devote the school hours to resting instead of study. The notion of the Toronto board is that the resting shall be done at home and the school hours assiduously devoted to study.

ELMER E. BROWN: I wish to propose an educational principle which I conceive to be fitting to this new order of things: Every man's education should carry him as far up the course of general culture as he can go consistently with his other duties in life; but every man's education should be rounded out with technical training for some definite occupation in life.

CURRENT EVENTS.

Professor J. G. Schurman, President of Cornell University has been named a member of the commission appointed by President McKinley to investigate the situation in the Philippines and to advise him as to the best policy to be adopted with regard to them.



Professor Schurman is a Prince Edward Islander, and gives his native province ample reason to be proud of one of her most distinguished sons.

The Peace treaty was ratified by the United States Senate on the 6th February, by one vote more than the two-thirds necessary to secure the concurrence of that body to a treaty document.

"Fighting Joe Martin" or the "Stormy Petrel" of Canadian politics as he has been called by one of his victims in the west, has succeeded, as Attorney General of British Columbia, in getting the legislature of that province to pass an alien law by which American miners are prohibited from the rich Atlin district, which is supposed to contain more gold than the Klondike. The Act may be disallowed, in consequence of the result that it may have at a critical moment on the labors of the joint high commission which is still sitting at Washington.

Aguinado, the leader of the insurgents in the Philippine Islands, has proclaimed a republic, and demands recognition on the part of the United States and Spain. He has many Spanish prisoners in his hands and threatens to use them against the United States. Hostilities were begun on the night of the 4th inst. by an attack on Manila, which was defended by Gen.

Otis and the fleet under Admiral Dewey. The attack was a fierce one. The fighting continued during the next day, with the repulse of the insurgents. The battle was renewed on the 7th with great loss to the Philippine insurgents and their complete dispersion. It is said they were supplied with arms by German agents. Agoncillo, the emissary of the Philippian insurgents in New York, fled to Montreal on the first news of the fight.

There arrived in St. John in January over 2,000 Doukhobors, emigrants from the Caucasus regions in Russia. These were transported over the Canadian Pacific Railway to their future homes in the Northwest, in the territory of Assiniboia and the upper waters of the Saskatchewan. A second company of Doukhobors, consisting of about 2,000, arrived at Halifax two weeks later, and, as there was a case of smallpox on board, the emigrants are detained there in quarantine before being sent to the Northwest. Another company is expected in April. These are an industrious agricultural people, simple in their way of living. They are peaceable, and do not believe in fighting. They have evaded the conscription laws in Russia, and thus involved themselves in a conflict with the authorities, which has ended in their emigration to this country with the consent of the Russian government.

'ROUND TABLE TALKS.

J. D.—Would you kindly, through the columns of the REVIEW, give some advice on the parsing of the verbs in the following sentences :

"Your deeds *would make* the statues of your ancestors blush."

"He *is learning* to read."

"The man *did not return*."

Should the words *would* and *make* be parsed separately, or as one verb.

"Your deeds *would make*," etc. *Would* here is not a principal verb followed by the infinitive "to make." It does not express determination. *Would make* is perhaps best regarded as the subjunctive mood, in a tense that is called—not very fitly—"future indefinite." See Meiklejohn's *English Language*, pp. 38, 39, par. 15; p. 54; p. 53 (*d*), new edition, par. 40, (vi) (*a*) (*b*).

"*Is learning*" = verb, reg. weak, trans., active, indic., present imperf., sing., third,—agreeing with its subj. "He."

"The man *did not return*." Here "did" is an auxiliary of negation. See above text, new edition, p. 53 (*a*). Compare West's Grammar, p. 137. "*Did return*" = verb, reg. weak, intrans., (act.), indic., past indef., negative form, etc. H. C. C.

M. P.—Will you kindly through the EDUCATIONAL REVIEW give me addresses of firms publishing works on Primary work.

Selby & Co., Toronto; Milton Bradley Co., Springfield, Mass.; N. E. Publishing Co., Boston; Silver, Burdett & Co., Boston.

A. D. J.—1. Of what use are the rays to the Compositæ family?

2. Of what use to the plant are the neutral flowers of such plants as the Hobble-bush, High-bush Cranberry, etc.

1. The rays of Compositæ serve the same end as the petals of an ordinary flower, *i. e.*, they make the flowers conspicuous so that insects can find and visit them, and carry pollen from one plant to another to effect cross-fertilization. It is known that seeds fertilized by pollen from a distinct plant produce more vigorous and fertile plants than if fertilized by pollen from the same plant; and in order that the pollen may be carried from one plant to another, flowers, with nectar to attract insects, color, etc., have been developed, and the pollen is carried as the insects go from one flower to another. The Compositæ flowers show an interesting division of labor in that some in a head make the showy parts for the whole cluster, leaving the remainder free for reproduction alone.

2. These neutral flowers have the same function as the rays of Compositæ, *i. e.*, they help to show the position of the flowers to insects. As in the Compositæ, there is a division of labor between the different blossoms of a cluster, some being showy for the whole head, leaving others free for reproduction alone. W. F. G.

S. E. B.—1. Would you kindly give in the REVIEW full directions for constructing triangles, etc., by the T. C. Allen Scale Card, as required in the ninth grade?

2. Multiply 16894754 by 112756, using three lines of partial products.

1. To construct a triangle, having given the base 275 and the angles at the base 54° and 47° .

By T. C. Allen's scale this triangle may be represented on the scale of 100 units to the inch, to the half inch, to the centimeter, or to two centimeters. We will take the larger scale, 100 to the inch. Place one leg of the compass on the figure 2 of the inch scale, and the other leg on the figure 0. The distance apart of the points of the compass represent 200. Then extend the leg of the compass which is at 0 over seven of the tenth-spaces as marked by the slanting lines, and the distance of the points apart now will represent 270. Let the points of the compass be both moved down over five spaces—opposite the figure 5—one following the vertical line going down from 2, and the other gradually extending to follow the slanting line, and their distance will now represent 275.

Mark off this length as AB on any straight line. With A as a centre and a distance equal to the chord of 60° (found on the scale of chords) describe a circle cutting AB produced in C. Then from the centre C, and with a distance equal to the chord of 54° , describe a circle cutting the first circle in D. Join DA. Then

the angle DAB will be equal to 54° . In the same way and on the same side of AB describe angle ABE = 47° . Let AD and BE be produced to meet in F. Then ABF will be the required triangle.

Instead of using the scale of chords to construct the angles, the small semicircles near the ends of the scale may be used. Let the centre given on the right semicircle be placed directly over the point A, and let the edge of the ruler be exactly parallel to the line AB; then near the upper right hand corner read off 54° on the small slanting lines, and carefully place a point C opposite on the paper. Join A and C by a straight line; then the angle BAC will be one of the required angles. In the same way the second angle may be constructed.

2.	16894754
	112756

	118263278
	946106224
	1892212448

	1904984882024

The first partial product is found by multiplying by 7; the second, by multiplying the first by 8, because $56 = 7 \times 8$; and the third, by multiplying the second by 2, because $112 = 2 \times 56$. The reason is clear.

G. J.—Will you please analyze the following sentence: "When he received pieces of poetry which he thought had worth in them, he rewarded the writer."

A. "He rewarded the writer"—Prin. clause.

a¹ "When he received pieces of poetry"—Adv. (of time) to "rewarded."

a² "Which had worth in them"—Adj. to "pieces."

He = subj. Rewarded = pred. The writer = obj.
When = connective. He = subj. Received = pred.
Pieces = obj. "Of poetry" = enlargement of obj.

Which = subj. Had = pred. Worth = obj. In them = ext. of pred.

"He thought" is parenthetical = (as he thought) and does not enter into the analysis of the sentence.

SCHOOL AND COLLEGE.

Hartland, N. B., is to have a new school building, of four departments, equipped with modern improvements.

Miss Eliza B. Crawley, teacher at L'Etang, Charlotte Co., has been most successful in adding to her supply of blackboard surface and other apparatus.

A teachers' association has been formed in Albert County, called the Hopewell and Harvey Teachers' Association, with A. C. M. Lawson as president, Miss Edith Comben, vice-president, and Geo. K. McNaughton,

secretary-treasurer. The time of meeting is the second Saturday of each month, at 2.30 p. m. The meeting for February is to be at Albert, and mineralogy is the subject chosen for discussion; the meeting for March is to be held at Hopewell Cape, that for April at Riverside, the one for May at Harvey Corner, and the one for June at Hopewell Hill.

Principal A. C. Harlow, and Miss Prime, of Weymouth Bridge school, N. S., have succeeded in equipping the school with a library, chemical apparatus, and flag.

In Quebec, the opposition to the idea of a Minister of Education proved so strong that the government has this year brought in a bill vesting the appointment in the government, rather than in the Council of Public Instruction, as formerly.

Dr. Geo. R. Parkin has consented to deliver the Alumni oration at the *Enœnia* of the University of New Brunswick this year, and it is proposed not to have a dinner, as last year, but instead, a *conversazione*, either at the University or Parliament Building.

The new school building for District No. 9, Sackville, was opened on Tuesday, January 10th. The building is of three storeys and contains four school-rooms and a hall, or auditorium. It will probably be known as the Sackville High School. The district contains, besides, three other buildings in use at present, in which five teachers are employed, making a total staff of nine for the district. During the afternoon of the opening day a representative gathering of citizens assembled, examined the building, and at 2.30 o'clock took seats in the auditorium, when Robt. Bell, the veteran secretary of trustees, as chairman, called the meeting to order and announced the new building as now completed and ready for school work. Addresses were then given by Trustees Copp and Sangster, Principal F. A. Dixon, Rev. Messrs. Wiggins, Daley and Howard, Dr. Brecken, Prof. Andrews and Dr. Allison. The staff in the new building is, F. A. Dixon, A. M., Principal, Grades VIII and IX; Miss Mary Fawcett, Grades VI and VII; Miss Hattie Ramsay, Grades IV and V; Miss Minnie Copp, Grades I, II and III.

Miss Sarah Turner, teacher at Prince of Wales, St. John Co., has raised the sum of \$30, with which she has purchased slate blackboard, and made other improvements.

A correspondent of the Hartland, N. B., *Advertiser* draws attention to the loose and untidy methods that prevail in keeping school premises clean. Rooms are only half swept every other day, and the dirt and refuse papers instead of being removed to a distance or burned are merely swept outside and allowed to make untidy the surroundings of the schoolhouse. How many schoolhouses throughout the country present to the passer-by these signs of careless teachers or trustees?

Miss Gertrude Morrell, who gave up her school at Beulah, Kings Co., N. B., last November on account of

ill health is slowly improving. Miss Morrell will not be able to take charge of a school for a year.

Since the last issue of the REVIEW, Ste. Anne's College at Church Point, in Clare, Digby Co., has been burned. This was a Roman Catholic institution conducted by the Eudist Fathers. The County Academy for the municipality of Clare, established by a special act of the legislature of Nova Scotia a few years ago for the benefit of the French population of Digby County, was located at Church Point, and its classes were taught in the class-rooms of the said college. The work of this Academy was therefore temporarily interrupted; but at this writing, arrangements have been made whereby the work of Grades IX and X will be continued in rooms which have been secured in the Presbytery adjoining. For lack of accommodation the work of Grades XI and XII has been discontinued for the present. At the time of the fire there were fifty pupils registered in the Academy and two Grade A teachers were employed, viz.: Messrs. J. Alphonse Benoit and Edw. Cummings, both of whom are successful teachers. In consequence of the smaller attendance resulting from lack of sufficient accommodation, Mr. Cummings' services have been discontinued, as under present conditions it is impossible to qualify for the Academic grant for two teachers. Mr. Benoit who has been Principal of the Academy for several years, has proved himself to be a most energetic and successful teacher and has succeeded in bringing the Academy up to a creditable state of efficiency.

The REVIEW's best wishes and congratulations to Mrs. W. W. Melville, née Miss Gertrude Tompkins, Carleton County, N. B.

A new Education bill has been introduced into the Quebec legislature. By it the study of agriculture will be made obligatory in all rural schools, and everywhere the useful art of drawing is to be taught. All elementary pupils are to be supplied with free school books, but the process will be gradual; there is no minimum of teachers' salaries provided for in the bill.

RECENT BOOKS.

To those who studied the science of chemistry thirty or forty years ago, under the system then in vogue, the introduction of the so-called New Chemistry, though heralded by many indications of a change in the more special periodicals of the day, came almost with the abruptness of a revolution, and many there are who even yet cling to their old ideas, though it would be hard now to find a modern text-book in which these old notions are ever alluded to. The two views, as typified by the respective symbols of water, HO and H_2O , even seem contradictory of each other. And yet, in the sense in which the symbols were used, both were true. The adoption of the symbol H_2O simply means that the composition of water, which of course is just the same now as it ever was, is looked at from a different point of view, the molecule being regarded as made up of two atoms of hydrogen, each occupying one unit volume and with a weight of unity, united with one volume of oxygen with a relative weight of sixteen, therefore in the proportion of one to eight, which is all the former symbol indicated.

In a similar way, and with almost equal suddenness, we are now having brought before us views of plant life and of plant organization, which may well be regarded as introducing a new botany.

To be told, for instance, that the old distinction between flowering and flowerless plants no longer holds good is sufficiently startling; as are the statements that in all plants, unless it be the very lowest, there is an "alternation of generations,"—a sexual alternating with a non-sexual phase,—that seed plants produce *spores*, that the ovaries of plants produce *eggs*, and that in the case of angiosperms, or so-called flowering plants, each ovary is reduced to a single egg, and that the anther is not to be looked upon as the male organ of the flower. But all this is simple enough when properly understood in connection with the facts upon which it is based. The facts are the same as ever, but they are better understood and looked at in a somewhat different way.

One principal cause for this change, in the manner of viewing things botanical, is the greatly increased knowledge of the lower orders of plants. The very fact that the name cryptogam, formerly applied to the so-called flowerless plants, is falling into disuse, is typical of the entire change. The word means "concealed union," but it is concealed only because the organs concerned are minute, and our eyes and our microscopes—perhaps our brains, too—were not sharp enough to see them. We now know that sperm-cells and germ-cells are alike concerned in all cases (or at least with but few exceptions), and that the pollen-tube and the egg (the true ovum as distinct from the ovule) have their counterparts in the reproduction of ferns, mosses, fungi, and even algae. And, curiously enough, we find that between the higher and lower orders, as between early and later geological ages, the relative importance and duration of the two phases of life (the sexual and non-sexual phase,—in reality distinct plants and now known as the gametophyte and sporophyte) have exactly changed places. In the lower plants, as in early times, the gametophyte phase, as seen in algae and fungi, has its greatest development; in the fernworts the disproportion, though still great, is considerably reduced; in seed plants it is only the sporophyte (*i. e.*, the ordinary flowering shoot) which ordinarily attracts attention, while the gametophyte is wholly microscopic and of very limited duration.

Another peculiar feature of the new botany is indicated by the names of the works in which the subject is treated. In several instances these are not entitled "botany" at all, but "plant life." That is, their purpose is not so much to study the mere structure of plants (anatomy and histology) or the functions of the organs (physiology), but to consider these in relation to each other and the whole plant *as a living being*. Hence, the work of botanical study is not so much that of the cutting up of plants (though this may be needed as subordinate to other ends), as the contemplation of the plant in its active growing state. In this connection much greater importance than was formerly the case is given to the study of the conditions of nutrition, growth and movement, while for similar reasons ecology, *i. e.*, the study of the "relations of the plant to the forces and beings of the world about it," comes in for a greatly increased amount of attention. This is well shown even in the different type of illustrations with which the more recent and advanced text-books are adorned. Instead of cuts representing only the shapes and relations of parts, or the results of sections made across particular organs, we now have plates, in some instances very beautiful ones, representing the

plants in their natural homes, in their relation to different kinds of soils, in relation to different conditions of temperature, moisture, air, etc., in their adaptations to other plants and to animals, and thus making the field of investigation far wider and far more attractive, more useful, too, than was the case with the old method.

It is interesting to notice, also, in this connection, that less importance than formerly is now assigned to the mere "analysis" of plants—a process as to the educational value of which the writer has long been somewhat skeptical. It is too much like hunting for a needle in a haystack, and, like the needle, unless put to other uses, of not much value when found.

These remarks have been suggested by the examination of the two recently published works referred to below.¹ Both are comparatively inexpensive; both are profusely illustrated, and, in the case of Atkinson's work, with plates of exceptional beauty. Both are warmly recommended to those who take an interest in the study of plants. In Kerner's *Natural History of Plants*²—a magnificent work, in four volumes, with numerous plates, many of them colored—similar subjects are discussed much more exhaustively; but the expense of its purchase is such as to place it beyond the reach of the ordinary student.

L. W. BAILEY.

In algebra, from the consideration of particular examples, we reach the general truth. Beginners in this science experience difficulty in passing from special cases to universal principles, for the generalizations involved demand a higher degree of abstraction than that required hitherto of their mental powers. When, however, the fundamental rules are thoroughly understood, and facility is acquired by working many examples, the student finds a further study of algebra comparatively easy and attractive. The authors of this work³ seem to have borne these facts in mind. There are many illustrative examples before the formal statement of laws. Especially is this so in the chapters on addition, subtraction, multiplication and division, to the consideration of which nearly one-fourth of the book is devoted. By the aid of this book the ordinary student cannot fail to have a good knowledge of the first principles of algebra. In the treatment of quadratics there is much to be commended. Proportion, the progressions, and the binomial theorem, come in for only a short notice by the authors. Throughout the book they have worked many concrete examples, and have furnished many excellent exercises to be solved by the student. The answers to the latter are not given, and in this respect the book is lacking. The algebra is for the use of secondary schools and colleges. The wisdom of placing so large a book in the hands of a high school student may well be questioned, while its elementary character unfits it for the use of a college student. The book, however, is one which will afford a very valuable addition to the library of any teacher of mathematics.

S. A. M.

¹BARNES' PLANT LIFE. By C. A. Barnes, Professor in the University of Wisconsin. Illustrated. 428 pp.; 12mo. Henry Holt & Co., New York, 1898.

ATKINSON'S ELEMENTARY BOTANY. Henry Holt & Co.

²KERNER'S NATURAL HISTORY OF PLANTS. Sixteen colored plates and 1,000 wood engravings. Four parts; 4th. Cloth. \$15.00 net. Henry Holt & Co., New York.

³TEXT-BOOK OF ALGEBRA, with exercises, by George Egbert Fisher, M. A., Ph. D., and Isaac J. Schwatt, Ph. D., Assistant Professors of Mathematics in the University of Pennsylvania. Part I, 700 pp.; 683+xiii. Price, \$1.25. Fisher & Schwatt, publishers, Philadelphia, Pa.

This is a manual¹ for the use of primary teachers, only on the supposition that the best teachers are to be found doing primary work. It is really an excellent piece of philosophical work, written in as simple a style as possible. Though it is as clear and as well written as one could wish, yet one fears that it is beyond the comprehension of the great majority of primary teachers. The great and good Bishop Berkeley and Dr. Watson (whom one suspects to be the inspiration of the writers) have shown that it is possible to express philosophical thought in the simplest language—one is almost inclined to say, in words of one syllable—yet one must have some natural aptitude for metaphysical discussion, or some training in philosophical work, to grasp the significance of such philosophical ideas as the writers of this little manual manipulate with such facility. The writers have thought out the subject clear from stem to stern; and they have given abundant practical examples of their theory. Probably Chapters IV and V, entitled, "Practical" and "Exercises," will be found most helpful to the ordinary teacher.

The preface sets forth with admirable lucidity the main contents of the writers. "The main propositions are that number is a relation based upon the idea of time, and not upon that of space, that all thought begins in analysis. From the former of these, certain inferences are drawn which have an important bearing on the teaching of the subject. It will be seen that in this view of the case all arithmetic which deals with the measurement of space is applied arithmetic; that in the scientific study of number the use of objects is not only unnecessary, but also inconvenient, and even destructive of clear numerical ideas; that no true idea of a fraction can be formed from a consideration of the spatial relations of objects. The second proposition furnishes us with a test for the validity of all methods of procedure in the acquisition of knowledge." With regard to the second assertion, that "all thought begins in analysis" and ends in synthesis, there can be little difference of opinion, though there may be much divergence in its applications. Nor, again, will any one seriously contend that number is not based primarily on the idea of time. Yet many will hesitate about approving the exclusion of all reference to space, especially in the use of objects. The need for the concrete, and the difficulty for many minds of finding it in purely temporal relations, make the use of objects in the study of number almost a necessity. For instance, the usual practice in teaching fractions begins with something that the child regards as a whole, a spatial object such as an apple. This is divided into equal parts. The authors recommend beginning with a group of equal units. The child is asked to notice the part one unit, or a smaller group of units, is of the whole. The difficulty for the child here is to keep constantly before his mind that the group, of say six units, is a whole.

Mahaffy, in his commentary on Kant, after noting that the expositors of Kant have uniformly derived the science of arithmetic from the intuition of time, says: "There is no other practical way of teaching arithmetic to a child or savage than by appealing to space intuitions. Let us add the sub-division of units into fractions is equally unattainable, originally, through intuition of time, but is easily obtained through space." A note refers to an "able" paper by Dr. Tarleton in *Herm-*

¹ THE GROUND-WORK OF NUMBER. A manual for the use of primary teachers. By A. S. Rose and S. E. Lang, Inspectors of Schools, Manitoba. Toronto; Copp, Clark Co.; 1898. Pp. viii and 123.

thena, No. 1, which develops a positive theory of the growth of arithmetic from sub-divisions of time. W. C. M.

THE JUVENILE ENTERTAINER,¹ a collection of humorous choruses, action and tableau songs, suitable for class and concert. This collection can be heartily endorsed and recommended to all teachers that are on the lookout for suitable and interesting numbers for an entertainment. All compositions are arranged in a simple manner and with piano accompaniment.

The Elementary Classics Series published by Macmillan & Co., London, has recently been enriched by the publication of two works that classical scholars will appreciate.² The first volume contains the *Lives* of twelve eminent Grecian leaders, by Cornelius Nepos, beginning with Miltiades and ending with Chabrias. The second is an edition of the first twelve letters in Pliny's Collection. Each contains a valuable historical introduction, with notes and vocabulary, which will prove of very great assistance to the student.

In Heath's Modern Language Series there are two stories which will form interesting reading for French and German students.³ *La Main Malheureuse* is a little tale taken from a French periodical of 1873, whose anonymous stories were written by the best authors of the time. This presents a charming and faithful picture of life among honest and industrious middle class people, is cleverly told, and is full of humor and pathos. The second is one of Johanna Spyri's best stories, and in addition to the interest aroused by the story, the vocabulary gives ample scope for the study of German.

¹ Compiled by G. Burton. Paper; pages 64; price, 75 cents. Publisher, J. Fischer & Bro., 7 Bible House, New York.

² GREEK LIVES, Vol. I, Cornelius Nepos, with introduction, notes and vocabulary, by H. Wilkinson, M. A. Cloth; pages, 145; price 1s. 6d.

PLINY'S LETTERS, I-XII, with introduction, notes and vocabulary, by C. J. Phillips, B. A. Cloth; pages, 55; price 1s. 6d. Published by Macmillan & Co., London.

³ LA MAIN MALHEUREUSE, Anonymous; with complete and detailed vocabulary by H. A. Guerber. Boards; pages 106; price 25 cents.

ROSENRESLI, by Johanna Spyri, with notes and vocabulary by Helene H. Boll. Boards; pages, 62; price 25 cents. Published by D. C. Heath & Co., Boston.

BOOKS RECEIVED.

To be noticed hereafter as time and space may permit.

MANUAL OF ENGLISH GRAMMAR AND COMPOSITION, by J. C. Nesfield, M. A. Macmillan and Co., London, publishers.

MACMILLAN'S NEW LITERARY READERS, Standard 0. Macmillan and Co., publishers, London.

COMMISSIONER HUME, a story, by C. W. Bardeen. C. W. Bardeen, publisher, Syracuse, N. Y.

PAPERS AND PAMPHLETS RECEIVED.

Statistics of Expenditure and Consumption in Canada, by Prof. John Davidson, M. A., Phil. D., Fredericton, N. B. From the Transactions of the Nova Scotia Institute of Science, Vol. X.

Biennial Report of the Board of Regents and the President of West Virginia University, 1898.

Annual Report of the Victoria, B. C., Public Schools, 1898. Frank H. Eaton, M. A., Superintendent.

Advances in Methods of Teaching Botany, by Prof. W. F. Ganong. Read at the meeting of the Society of American Naturalists, N. Y. December 1898.

Papers on the Characteristics of Certain Aqueous Solutions, by E. H. Archibald, B.Sc. and T. C. McKay, B.A., Dalhousie

(Continued on page 200.)

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S. B. SINCLAIR,
Vice-Principal Normal School, Ottawa.

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W. F. CHAPMAN, Public School Inspector.

LITTLE PEOPLE'S SEAT WORK, No. 1. For First Grade. Arranged by Miss M. Nimmons, Winnipeg. 32 pages. Price 5 cents.

LITTLE PEOPLE'S SEAT WORK, No. 2. For Second Grade. Arranged by Miss M. Nimmons, Winnipeg. 64 pages. Price 10 cents.

ENGLISH GRAMMAR FOR BEGINNERS. By Alfred S. West, M. A., author of Elements of English Grammar. Price 25 cents.

HIGH SCHOOL CADET DRILL MANUAL. Arranged by W. Bennett Munro, M. A., LL. B., Capt. 42nd Batt. Cloth 40 cents.

STORIES OF THE MAPLE LAND. Tales for children of the Early Days of Canada. By Katherine A. Young, suitable for supplementary reading. Price 25 cents.

SOME CANADIAN BIRDS. Illustrated. An account of a number of common birds in Eastern Canada. First series—Birds of Field and Grove. By Montague Chamberlain. Boards, 30 cents.

THE PUBLIC SCHOOL ARITHMETIC. Based on McLellan & Dewey's "Psychology of Number." By Dr. J. A. McLellan, of the Ontario Normal College, and A. F. Ames, B. A., Superintendent of schools, Riverside, Illinois, U. S. Price 75 cents.

ALGEBRAICAL EXERCISES and EXAMINATION PAPERS. By C. A. Barnes, M. A., Inspector of schools, Lambton. The book contains exercises on the Simple Rules, Factoring, Measures and Multiples, Involution, Equations and a collection of Examination Papers. Price 30 cents.

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The Copp, Clark Company, Limited, Publishers,
TORONTO.

College, Halifax. From Transactions of the N. S. Institute of Science, Vol. IX.

Evidence of Dr. James Fletcher, Entomologist and Botanist of the Dominion Experimental Farms on Agriculture and Colonization. May 1898.

The "Dip" of the Magnetic Needle in New Brunswick, by Prof. A. Wilson Duff. From Bulletin XVII, N. B. Natural History Society.

Notes of a Wild Garden, by G. U. Hay. From Bulletin XVII, N. B. Natural History Society.

FEBRUARY MAGAZINES.

The *Canadian Magazine* is a bright and interesting number, full of articles and illustrations describing topics and scenes in Canadian life. Especially interesting to parents and teachers is the editorial on what constitutes the real spirit of education. . . . In the *Atlantic Monthly* Professor James begins his interesting and valuable Talks to Teachers on Psychology, defining the relations of the subject and the necessity of approaching it from the point of view of the practical purpose for which man's mind was given him, namely, to adapt him to his terrestrial environment. . . . In the *Ladies' Home Journal* Mrs. Lew Wallace writes of The Murder of the Modern Innocents, a powerful and convincing protest against the over-education of children. . . . In the *Century*, What Charles Dickens Did for Childhood, with full-page illustrations by Albert Sterner, is the title of a very interesting paper by Mr. James L. Hughes, Inspector of Public Schools, Toronto, showing that Dickens was one of Froebel's earliest supporters in the English-speaking world. . . . *St. Nicholas* is especially rich this month in stories and pictures. That veteran Arctic explorer, Lieut. Peary, recounts some of his own experiences in a paper on 'Polaris' and 'Cassiopeia', and Other Bears. . . . The *Chautauquan* begins an unusually interesting number with an illustrated article on The Education of Englishmen. . . . The *Living Age* in its weekly issues continues to give best articles from the English magazines. In its issue of February 4th is an article on Charles Dickens, by Andrew Lang, and one on French Views of an English University. In this number is the usual monthly supplement, which gives readings from the latest books. . . . *Appleton's Popular Science Monthly* has the following valuable educational articles: Mivart's Groundwork of Science, The Science of Observation, A Short History of Scientific Instruction, Evolution and Education Again.

THE HOUSEKEEPER is published at Minneapolis, Minn., twice a month, and comprises twenty pages handsomely illustrated and printed. Taking into consideration its size, character and frequency of publication, it is the lowest-priced woman's magazine in the world. Subscription, 50 cents a year.

N. B. Education Department.—Official Notices.

I. DEPARTMENTAL EXAMINATIONS.

(a) *Closing Examinations for License*—The Closing Examinations for License, and for Advance of Class, will be held at the Normal School, Fredericton, and at the Grammar School buildings in St. John and Chatham, beginning on Tuesday the 8th day of June, 1899.

The English Literature required for First Class candidates is Shakespeare's Richard II., and Selections from Keats, Shelly and Byron as found in Select Poems, published by the W. J. Gage Co., 1896.

(b) *Normal School Entrance Examinations and Preliminary Examinations for Advance of Class*—These examinations will be held at the usual stations throughout the Province, beginning on Tuesday, July 4th, 1899, at 9 o'clock a. m.

Candidates are required to give notice to the Inspector within whose inspectorial district they wish to be examined not later than the 24th day of May. A fee of one dollar must be sent to the Inspector with the application.

(c) *Junior Leaving Examinations*.—Held at the same time and stations as the Entrance examinations.

The Junior Leaving Examinations are based upon the requirements of the course of study for Grammar and High Schools as given in the syllabus for Grades IX and X, and will include the following subjects: English Grammar and Analysis; English Composition and Literature; Arithmetic and Book-keeping; Algebra and Geometry; History and Geography; Botany; Physiology and Hygiene; and any two of the following: Latin, Greek, French, Chemistry, Physics. [Nine papers in all]. The pupils of any school in the province are eligible for admission to this examination. Diplomas are granted to successful candidates.

Fee of Two Dollars to be sent with application to Inspector, not later than the 24th of May.

The English Literature for the Junior Leaving Examinations will be Select Poems of Goldsmith, Wordsworth and Scott, as found in collection published by W. J. Gage Co., 1896.

(d) *University Matriculation Examinations*. Held at the same time and stations as Entrance examinations. Application to be made to Inspector, with fee of two dollars, not later than May 24th.

The Junior Matriculation Examinations are based on the requirements for matriculation in the University of New Brunswick, as laid down in the University calendar. (Candidates will receive a calendar upon application to the Chancellor of the University, or to the Education Office.)

The English Literature subjects are Shakespeare, Richard II., Rolfe Edition, and Selections from Keats, Shelly and Byron, as found in Select Poems, published by the W. J. Gage Co., Toronto, 1896.

The examination paper in French will be based on Macmillan's Progressive French Course and Macmillan's French Reader (2nd year), or, as an alternative, Pujol's French Class; Book to page 262. (See University Calendar.)

The Department will supply the necessary stationery to the candidates at the July examinations, and all answers must be written upon the paper supplied by the Supervising Examiners.

In the June examinations the candidates will supply their own stationery.

Examinations for Superior School License will be held both at the June and July examination. The First Book of Caesar's Gallic War will be required in both cases.

Forms of application for the July examinations will be sent to candidates upon application to the Inspectors, or to the Education office.

(e) *High School Entrance Examinations*.—These examinations will be held at the several Grammar and other High Schools, beginning on Monday, June 19th, at 9 o'clock a. m. Under the provisions of the Regulation passed by the Board of Education in April, 1896, question papers will be provided by the department. The Principals of the Grammar and High Schools are requested to notify the Chief Superintendent not later than June 1st, as to the probable number of candidates.

II. TEACHING DAYS AND SCHOOL HOLIDAYS, 1899.

SUMMER HOLIDAYS. Six weeks, beginning July 1st. In cities, incorporated towns, and Grammar and Superior School Districts in which a majority of the ratepayers present at the annual school meeting voted for extension of vacation, eight weeks beginning July 1st.

CHRISTMAS HOLIDAYS. Two weeks, beginning on December 23rd.

OTHER HOLIDAYS. Good Friday, the Queen's Birthday, and Thanksgiving Day; also, in the City of St. John, Loyalist Day. *The Monday and Tuesday following Easter Sunday, and Labor Day, are not hereafter to be reckoned as Public School Holidays.*

No. of Teaching Days, First Term, 123; in cities, etc., 113.

No. of Teaching Days, Second Term, 94; in cities, etc., 84.

J. R. INCH,
Chief Supt. of Education.
Education Office,
February 8th, 1899.

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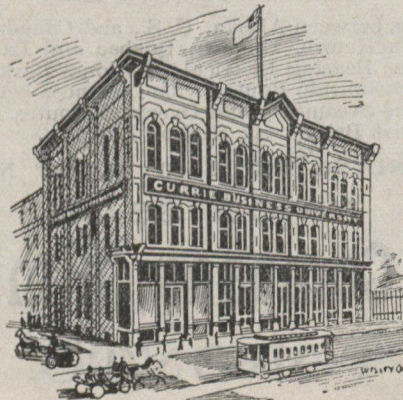
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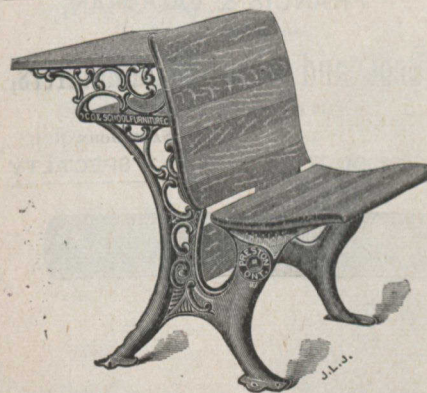
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