

# THE EDUCATIONAL REVIEW.

FOR THE ATLANTIC PROVINCES OF CANADA.

Vol. II.

SAINT JOHN, N. B., FEBRUARY, 1889.

No. 9.

*JUST PUBLISHED.*

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This edition is slightly different from the one published in the United States—certain alterations having been deemed necessary by the Board of Education in order to adapt it for use to this Province—and is therefore the only edition to be used in the Schools.

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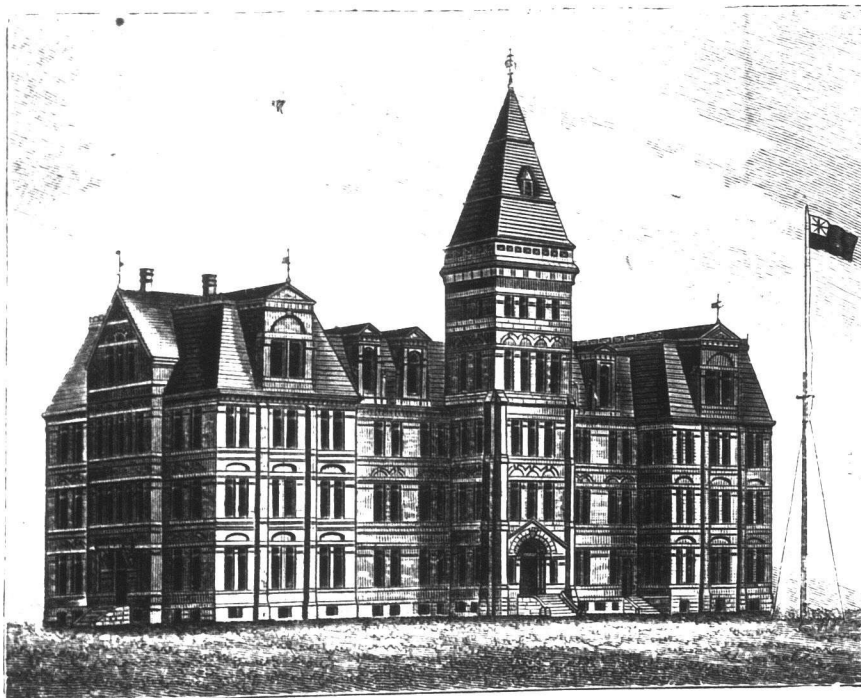
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# The Educational Review.

Devoted to Advanced Methods of Education and General Culture.

PUBLISHED MONTHLY.

ST. JOHN, N. B., FEBRUARY, 1889.

VOL. II. No. 9

A. H. MacKAY, B. A., B. Sc.,  
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Editor for P. E. Island.

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Editor for New Brunswick.

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The REVIEW is issued from the office of Barnes & Co., St. John, to whom subscriptions may be paid if convenient.

## CONTENTS:

EDITORIAL NOTES—	161-163
EDITORIAL—	163-165
Stick to the Text-book—Mr. Parkin's Retirement—Curious Pictures on Rocks—Canadian Students at Harvard.	
ASTRONOMY—Among the Constellations, No. X.—Notes	165-166
NATURAL SCIENCE SERIES—Ferndale School, No. XIX.	167
HINTS FOR THE SCHOOL ROOM—	168-171
THE INTERPROVINCIAL CONVENTION—	171-172
CONTRIBUTED ARTICLES—	172-174
A Plea for Music—A N. Y. Kindergartner.	
SELECTED ARTICLES—	175-177
Memoirs of a Butterfly—A Petrified Stump—Teachers' Salaries—Daily Bread.	
Among the Academies—N. S. Summer School—Personal—Question Department—Literary Notes—Book Reviews—Exchanges.	177-179
NEW ADVERTISEMENTS—	
Shorthand (p. iii) —Wanted (p. iii.)	

**Notice of Change of Address should be promptly sent to EDUCATIONAL REVIEW, St. John, N. B. The former as well as the new address should be given.**

## EDITORIAL NOTES.

IT is the intention of "Ferndale School," to turn attention for a short time to our birds—by way of change.

THE meeting of the U. S. National Educational Association for 1889 will be held at Nashville, Tenn., July 16th-19th.

THE new text-book, Palmer's Temperance Teaching of Science, has just been published by Messrs. J. & A. McMillan, St. John. The volume is neat and cheap, and is a useful addition to the series of text-books for New Brunswick schools. The edition published by Messrs. McMillan has certain alterations from the American edition, which were deemed necessary by the N. B. Board of Education to adapt it for use in this province.

PROFESSOR GEORGE LAWSON, of Dalhousie College, ex-president of the Royal Society of Canada, as Secretary for Agriculture in Nova Scotia, sends a circular to secretaries of agricultural societies inviting the importation of "Sharpe's Imperial Chevalier Bar-

ley" for trial in the province. The variety is described as capable of growing on any ordinary description of land. It was obtained as the result of repeated growth and careful selection, gives an enormous yield, and is a grain of splendid quality.

THE FRUIT GROWER'S ASSOCIATION held a very interesting session at Wolfville last month. Professor Saunders, Director of the Dominion Experimental Agricultural Farm, took part in the proceedings. Professor Coldwell of Acadia, read a paper on the "Natural History of the Apple," Mr. S. F. Parkes, on "Apples and Oranges." The English sparrow was discussed and generally condemned. Dr. Henry Chipman, Grand Pre, was elected President, W. H. Blanchard of Windsor, Vice-president, C. R. H. Starr, of Wolfville, Secretary-Treasurer. Our schools should by occasional oral and object lessons advance the interests of all such industries. The REVIEW has faith in industrial education.

IN a recent article on the Greek language, Professor Blackie observes: "I undertake to prove that by learning Greek in the natural and true way as a living language, by a direct appeal to the ear and response by the tongue, thinking and speaking in Greek from the very first lesson, a greater familiarity with that noble language will be acquired in five months than is done now by the assiduous labor of as many years. Nature is always right; schoolmasters and scholars are sometimes wrong."

THE *Educational Times*, of London (Eng.), gives the following amusing and instructive extract from Inspector Oakley's notes on the lessons given before him by students:—"The faults which he condemns are: (1) The echo lesson, in which the pupils are expected to reproduce the information imparted to them in precisely the same form as that in which it was doled out; (2) the lecture lesson, which soon exhausts the children's power of attention, and not infrequently sends them to sleep; (3) the disproportionate introduction, either direct but too long, or indirect and too tedious; (4) the desultory lesson, in which the teacher is constantly passing from one topic to another having no connection with it; (5) the discursive lesson, in

which the teacher is constantly going off at a tangent and forgetting to return; (6) the wrongly directed lesson, which is given to the inspector instead of to the pupils; (7) the disproportionate lesson, where a want of due relation magnifies the unimportant and glosses over the essential; (8) the unorganized lesson, which is given without due regard to the previous knowledge of the children; (9) the inelastic lesson, in which no answer is accepted that is not in exact verbal accord with the answer already in the teacher's head; (10) the mechanical lesson, in which the questions leave no room for the exercise of the intelligence; (11) the irrational lesson, in which attempts are made to 'elicit' from the children matters of fact of which they have never heard."

We cull a few notes here from the annual report of Miss Copeland, a graduate of the Pietermaritzburg academy, now teacher of the Indian school, San Fernando, Trinidad.

"In June, of this year, there was a jubilee examination subject, 'Her Majesty's Colonies,' open to children of all the schools in Trinidad; a large number competed; ten were sent up from our school. Thirty-two prizes were awarded, two of which were taken by our pupils. It is suggested that these examinations should take place annually, on different subjects, to encourage the young to study.

\* \* \* \* \*

"As in former years our school has been visited by Canadian friends of the mission, also by His Honor, Justice Lumb, lately from England. He spent a morning with us and examined each scholar, showing such a kindly interest in them that all felt better for his visit, and encouraged to go 'forward.' In his address to the young men in the church in the evening, he made the proposal that a penny bank be started, which was carried into effect in September, in connection with the Sabbath-school. It is open every Wednesday evening at six o'clock, a half hour before prayer-meeting. I keep a little cash-box in the school, and as the children get a penny they bring it to me for safe keeping. Most of the children have taken a decided interest in it, and although some can afford and do deposit larger sums, we see many little ones walking up at the appointed hour with bank book and penny in hand. One afternoon Mr. Grant asked three little Indian boys, who were playing in the yard, to come and do a little work for him; when they had finished he gave each a penny to buy a piece of bread for themselves, but they came around to the other side of the house and asked for me, and gave me their pennies to keep until 'bank night.'"

The N. S. Normal School museum has recently been enriched by a number of very valuable contributions from its friends. Mr. George Stewart of Truro has given a fine specimen of very high grade silver ore from Mexico, and Mr. Watson Bishop, the Kentville ornithologist, the following: An alligator's egg, a logger-head turtle's egg, and a set of two eggs of the brown pelican, all from Florida, together with the following from Nova Scotia: A purple finch, stuffed; a nest of the chipping sparrow, with a set of four eggs; a set of three eggs of the spotted sandpiper, and a set of six eggs of the yellow-hammer, all from Kentville and vicinity; two eggs of the great black-backed gull, from Isle Haut, and a set of three eggs of the herring gull, from the same place. Friends of the institution may feel quite sure that such contributions are welcomed.

LET us get rid of the superstition that the process of analysis and parsing by themselves, can be made to do duty as the means of gaining a knowledge of the English language. Let us rather by patient study of an author gain an insight to the thought, and with the inspiration that comes from successful effort, endeavor to lead others by right methods and patient trial to see and appreciate what we ourselves have gained only by effort. This is the only way to gain what is excellent in thought, and the method may be summed up in a word or two: the ability to think and to do, and afterwards to get our pupils to think and to do. This is the gospel of the new education.

IN THIS number of the REVIEW we bring to an end the proceedings of the Interprovincial Convention of the teachers, held in St. John, in July last. No arrangements could be made at that time to publish the proceedings and principal papers in a volume. In the absence of such permanent form the REVIEW has, with the assistance of the daily press of St. John, endeavored to supply the deficiency by publishing an outline of the proceedings together with some of the more important papers and addresses. The admirable review by Sir William Dawson of the work of the convention, and the possibilities of future education in the Atlantic provinces, which we publish in this issue, coupled with his notable retrospect at the opening of the convention, found in the August number of the REVIEW, is a suitable ending to an introduction which struck the key-note of power and enthusiasm in that remarkable convention.

If our readers have preserved the copies of the REVIEW and will bind them for this year, they will preserve in permanent shape a record that will as years elapse grow more and more valuable.

IN OUR next number, to be issued March 10th, we shall begin a series of lessons on elementary botany.

VICK'S FLORAL GUIDE for 1889 has come to hand, and is more than ever "a thing of beauty." Its elegant illustrations of hundreds of different plants and fruits, with its instructions for sowing and transplanting, descriptions of plants of all kinds for garden and conservatory, make it a Guide which no one should be without.

#### STICK TO THE TEXT-BOOK.

Are there teachers who make use of "ready-made" lessons cut from some educational journal, and who rely upon these in the school room? If so, we would say, Stick to the Text-book.

There are many so-called educational journals that furnish little else than these ready-made lessons, which the lazy teacher, looking around for labor-saving devices, eagerly catches at and uses without regard to fitness or subject matter. To such we would say Stick to the Text-book.

But stick to the text-book does not imply, have it always before you during class hours, slavishly keeping line upon line in view as the scholar moves along, but to make a diligent use of it out of school, so that when the time for recitation arrives, you may discard it and go before the class with the knowledge of your subject fully arranged in your mind, together with the best methods of presenting it. Then you will be conscious of moving along on a higher plane than that of your class, but to which they will eagerly look and strive to reach if you set them the example.

Nor do we mean when we say, "Stick to the Text-book," that the teacher is not to make use of all the appliances within his power to supplement his text-book. Methods and information from books and from educational and other journals, may be studied to advantage, and if found suitable, incorporated with the matter in the text-book.

But let all "methods" and "school-room aids" be carefully scanned before they are used. The teacher who will diligently and conscientiously sit down, study the district and its wants, the school and each scholar within its walls, will, if he has but a moderate amount of the material to make a successful teacher, reach methods infinitely superior to those cut out for him by one who may have little experience in teaching.

Stick to the text-books, study them, draw from competent instructors living knowledge, and study more carefully still the minds and dispositions of your scholars. Strive, in the short time you may be with them, to lay the foundation of an excellent and useful life.

#### MR. PARKIN'S RETIREMENT.

The retirement of Mr. Geo. R. Parkin from the principalship of the Collegiate school, Fredericton, is a loss to the teaching profession in New Brunswick. Mr. Parkin ever commanded the respect and esteem of his pupils, by whom he was regarded as a true friend and counsellor. Taking as his model such teachers as Matthew Arnold and Thring, he drew an inspiration from their lives and work that made his school at Fredericton the nearest approach to Rugby or Uppingham on this side of the Atlantic. Himself, full of energy, life and hope, he entered with ardor into the work of training his pupils for the active duties of life. How successful he has been, let the boys themselves tell:

*Dear Mr. Parkin:* The pupils of the Collegiate school, over which you have been head master now for so many years, come to bid you good-bye, and to wish you prosperity in that great work you are undertaking.

We are sure that you cannot leave the school without some regret, for you have served it with constant unselfish care, not for the sake of gain, and your labor here has always seemed to be for love rather than hire. You have given your heart to the school through many changes, and have brought to manhood and womanhood many boys and girls whom we do not know even by name, until now, we who have been here so short a time can give you nothing but our poor thanks in return for all you have done.

This, however, is not the only return you have; for we know that if all your old scholars could come together there would be hundreds to stand up and say that they owed you more than it was in their power—more than it was in anyone's power to repay. But now they are away in all parts of the earth; some have not been known since they left these rooms; and some whose future the school looked upon with great hope were not permitted to pass the beginning of life. And still we know that you, who trained them, have not forgotten them. Every one, we know, is treasured in your memory, and none comes to good or evil in the world that you are not made glad or sorry by it.

To-morrow you begin a new and great enterprise with a new year of your life. Those who are here wish you farewell. We wish you an increase of true success and lasting happiness with each return of your birthday. We ask you to accept this field-glass from us and to use it on your travels. Those who are old scholars cannot be present to take leave of you, but we feel that they will join in our good wishes when they hear of your departure.

We will look out and forward at your widening career; and we think that before long Canada and far off Australia shall learn to say what this school knows so well:

Languor is not in your heart,  
Weakness is not in your word,  
Weariness not on your brow.  
You alight in our van! at your voice,  
Panic, despair, flee away.  
You move through the ranks, recall  
The stragglers, refresh the outworn,  
Praise, re-inspire the brave,  
Order, courage return:  
Eyes rekindling, and prayers  
Follow your steps as you go.

Collegiate School, Fredericton,

### CURIOUS PICTURES ON ROCKS.

Mr. George Creed, of South Rawdon, N. S., recently read a paper before the Nova Scotia historical society on some "pictographs" investigated by him last summer on the Fairy Rocks, between Annapolis and Queens County. Certain curious etchings on these rocks had puzzled antiquarians for some time. During the past summer Mr. Creed in company with several assistants made copies of the curious pictures, chiselled on the rocks and covering some 8,000 superficial feet. The rocks are of slate formation, covered for a great part of the year with water; and even when not covered the pictures are visible only after the strictest examination. They represent figures of all kinds of ships and canoes, quadrupeds, birds, snakes, human hands, feet, faces, Roman crosses, with many other designs,—the work being in some cases rough, in others wonderfully skilful and artistic. One picture represents a ship belonging to a period from one hundred and fifty to three hundred years ago. This was cut over another ship of the period of A. D. 1000, and appeared to be such as used by the Norsemen. Mr. Creed has advanced the theory that the Indians saw these ships pass the shores of Nova Scotia, and then drew them on the rocks. Several other representations of vessels of a more recent date are to be seen.

If these are, as Mr. Creed supposes, the graphic legends passed down from generation to generation by Indian tribes, their importance to the archaeologist is very great. They have already received the attention of several scientific gentlemen in Great Britain and the United States.

### CANADIAN STUDENTS AT HARVARD.

A correspondent sends us the following list, which includes all Canadians at present resident at Harvard University. The Atlantic Province men are indicated by an asterisk.

#### TEACHERS.

[The dates are those of taking A. B.]

\* S. M. MacVane, A. B., *Acadia College*, 1865. Professor of History.

F. C. Sumichrast. (Lately of Halifax). Instructor in French.

\* F. W. Nicholson, A. M., *Mount Allison*, 1883. Instructor in Sanskrit.

\* W. F. Ganong, A. M., *Univ. of New Brunswick*, 1884. Assistant in Botany.

\* B. Rand, Ph. D., *Acadia College*, 1875. Private Assistant in Philosophy.

#### GRADUATE DEPARTMENT.

C. W. Colby, A. B., *McGill Univ.*, 1887. Stanstead, P. Q. Morgan Fellow. History.

\* A. J. Denton, A. B., *Acadia College*, 1879. Halifax. Chemistry and Botany.

\* W. F. Ganong, A. B., *Univ. of N. B.*, 1884; A. M., *ibid.*, 1886; A. B., *Univ. of N. B.*, 1887. St. Stephen. Biology.

J. G. Hume, A. B., *Univ. of Toronto*, 1887. Toronto. Philosophy.

\* F. W. Nicholson, A. B., *Mount Allison*, 1883; A. B., *Univ. of N. B.*, 1887; A. M., *ibid.*, 1888. Springhill, N. S. Classical Philology.

#### HARVARD COLLEGE.

\* *Junior Class*.—R. W. Ford, A. B., *Acadia College*, 1887. Milton, N. S.

\* L. H. Jewett, St. John.

\* *Senior Class*.—T. H. Carle, A. B., *Univ. of N. B.*, 1885. Fredericton. With privilege of omitting junior year.

#### THE DIVINITY SCHOOL.

*Junior Year*.—W. A. Taylor, A. B., *Mount Allison*, 1885. St. John.

#### THE LAW SCHOOL.

*Third Year*.—G. G. Ruel, St. John.

*Senior Year*.—J. W. Bailey, A. B., *Univ. of N. B.*, 1884. Fredericton.

H. G. Pease, A. B., *Univ. of N. B.*, 1885. Fredericton.

#### THE MEDICAL SCHOOL.

*Third Year*.—H. H. Banks, Barrington, N. S.

\* C. A. Foster, Bridgetown, N. S.

*First Year*.—J. A. McIntyre, A. B., *Univ. of N. B.*, 1880. St. John.

\* W. H. Macdonald, A. B., *St. Francis Xavier's College*, 1887. Antigonish, N. S.

#### DENTAL SCHOOL.

*Third Year*.—P. W. Moriarty, St. John.

F. A. Stevenson, D. M. D., *Univ. of N. B.*, 1888. Montreal.

*First Year*.—G. M. Noble. Coaticook, Canada.

\* J. T. Paul, St. John.

Mr. A. E. McCordie, third year, Law School, and Mr. W. F. Harris, Freshman, are Canadians by birth, but now reside in the United States.

It will be noticed that all the Canadians on Harvard's teaching staff are Atlantic Province men; of these, Acadia College has graduated two, Mount Allison one, and the University of New Brunswick one.

It is interesting and suggestive, also, to note that of the twenty students from all Canada, in attendance at this, the first American University, sixteen are from the Atlantic Provinces. Of this number, ten are College graduates, representing the following institutions: The University of New Brunswick, five; Acadia College, two; Mount Allison, two; St. Francis Xavier's, one.

Conclusions must, for obvious reasons, be drawn with extreme caution from such a list as this, but one or two lessons for our colleges are taught by it. For instance, *all* of the Canadian under-graduates in the arts department of Harvard are from the Atlantic Provinces. Why do not some of the other Provinces send from their much greater population a single student to the Harvard under-graduate course? The answer would seem to be, that the other Provinces provide in their own universities, an under-graduate course which is ample for all under-graduate needs. This is borne out, also, by other facts, not shown in the list, and it means that our colleges should direct their energies towards building up their arts departments, and not waste their force in attempts to build up special technical schools. The day for these will come when our colleges graduate men fitted to rank at academic institutions with the graduates of the best Canadian universities.

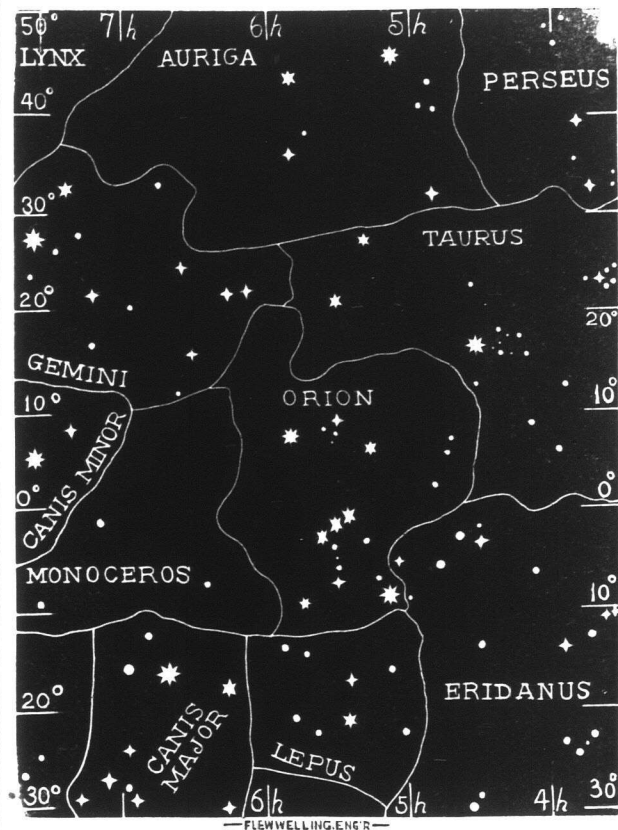
Again, as the list indicates, but as all college men know well, graduates of the different Atlantic Province colleges are not admitted to Harvard upon an equality. This points to the desirability of some uniform standard of graduation, and, consequently, of matriculation and under-graduate curriculum; in other words to an academic, though not necessarily actual union of all of the Atlantic Province colleges. This need not interfere with the individuality or peculiar field of usefulness of each.

Post-graduate students from the Ontario and Quebec colleges go for the most part to Johns Hopkins University, while their medical students, like our own, go chiefly to Montreal, Edinburgh, New York or Philadelphia. As for the other special schools, Law, Divinity and Dental, the other Provinces have their own, while those of Harvard are the nearest good ones to these Provinces, and the various educational advantages of Boston are an added attraction. The majority of Canadians in these departments would naturally, therefore, be Atlantic Province men.

WE ARE very much pleased to learn from our exchanges that the teachers of Kings and Hants Counties, Nova Scotia, presented their Inspector, C. W. Roscoe, M. A., of Wolfville, with a complete suit of fur, as a new year's surprise gift. The address was read by George J. Miller of Hantsport High School and the presentation was made by Principal J. L. Bishop of Wolfville. Inspector Roscoe's abilities are well known outside of his inspectorate we may add. His highly successful devotion to the modern education was recognized by his election last summer to the vice-presidency of the Nova Scotia Summer School of Science.

### AMONG THE CONSTELLATIONS.

No. X.—OUR STAR MAP.



With the above we commence a new series of star maps, to be prepared from time to time specially for the EDUCATIONAL REVIEW. We trust they will be found to be more accurate and more systematic than those generally found in cheap, popular star atlases. In connection with this map our readers may peruse the articles in this series for January, February, March and April, of last year. We shall here simply explain its principal points.

To see the constellations, as figured here, take this map, face the southern point of the sky exactly, say, at half past seven in the evening, when this paper comes to hand (about the middle of February). The lower margin of the map will then nearly represent the southern horizon, and the top margin will represent what is overhead in the zenith.

Every star of the first, second, third and fourth magnitudes is represented here. If any of our readers will find one omitted, call us to task for it. Occasionally, stars of the fifth or sixth magnitude, the smallest visible to the ordinary vision, are indicated; but, as they are so numerous, they will only be indicated when in an especially interesting position.

To enable the reader to know the magnitudes of the stars from the chart, we propose to follow strictly

the following usage: Eight-rayed stars will indicate first magnitudes; six-rayed stars, second magnitudes; four-rayed stars, third magnitudes; ordinary round dots, fourth magnitudes; minute round dots, fifth magnitudes or sixth magnitudes.

We shall not burden the map with the Greek letters; first, because they mask the configurations of the stars; second, because many of our readers will probably lack the nerve to master the simple Greek alphabet, and might be alarmed at the apparition of

Grecian ghosts that in battle were slain,  
And unburied remain  
Inglorious on the plain!

We may change our mind, however, at any time on this point.

Again, to foster an accurate and mathematical knowledge of the face of the sky, and the position of heavenly bodies, we indicate the *right ascension* on the horizontal margins, and *declination* on the vertical margins. Thus, Orion is between five and six hours R. A. Right ascension in the sky corresponds to longitude on the earth. Declination corresponds to terrestrial latitude. The north and south poles in the sky are the north and south poles of the earth produced. And as the equator is midway between the terrestrial poles, so is the equinoctial line midway between the celestial poles. Produce the plane of the equator of the earth into the sky and it will mark out the equinoctial.

In our star map the equinoctial line is marked  $0^\circ$ , and it passes right over the three stars in the centre of Orion. The line  $10^\circ$  below, is  $10^\circ$  south declination. The line  $10^\circ$  above, is  $10^\circ$  north declination. Our map ranges from a little more than  $30^\circ$  south declination to  $50^\circ$  north declination—a little north of the zenith, in the Atlantic provinces.

Right ascension lines are drawn like lines of longitude on the earth, from the north pole to the south pole, cutting the equinoctial at right angles. We draw every 15th degree line in our map, because the sky appears to revolve  $15^\circ$  in one hour. In twenty-four hours it will revolve  $360^\circ$ . Instead of measuring in degrees, however, as longitude on the earth, we measure in hours and minutes. It is so convenient. Stars in six hours R. A., will be on the meridian exactly *one* hour after those on the five hour R. A. line. Remember the sky rotates to our senses as if the axis of the earth produced to the north and south pole stars were its axis.

Right ascension is measured eastwards, from the point in the equinoctial where the sun crosses it to the north, on the 22nd of March—that is, from the first point of Aries. The line passing through this point to the north and south pole stars, is to the sky

what the meridian of Greenwich is to the earth. But on the sky R. A. is always measured easterly until it becomes 24h; which is always equal to 0h.

But we may be asked the question, Why are your lines of R. A. not drawn converging on each side of the equinoctial? Simply for convenience of drawing. The position of the stars between  $30^\circ$  and  $50^\circ$  N. D., for instance, will be slightly distorted. Their east and west distances will be a little too great for absolutely correct configurations. But the map will, on the other hand, enable the R. A. and Dec. to be read off more easily, and the amount of distortion will not, in the slightest, affect the ease with which the stars can be recognized. For north polar stars beyond  $40^\circ$  and  $50^\circ$  N. D., a conical projection will give good results. South polar stars are invisible, and we shall, therefore, have nothing to do with them.

At the end of February Orion will be exactly south at about 6.30 P. M., local time. About the middle of March, at 5.30. In a word, every star souths about a half an hour earlier every week, or two hours earlier every month.

#### Astronomical Notes.

*Venus* is brilliant in the western sky, in the constellation *Pisces*.

*Mars* is nearer the horizon, in the constellation *Aquarius*, in the neighborhood of *Mercury* nearing the sun.

*Mercury* was clearly visible to star-gazers on the evening of the 30th ult., and for several evenings following, and was in line with *Venus* and *Mars*. The new moon on the evening of the 2nd inst., and these three planets, made the western heavens unusually bright and conspicuous. It is a planet of a pinkish color, shining with a twinkling light, and from its nearness to the sun may have been mistaken for a fixed star.

*Saturn* is in *Leo* not far from the first magnitude star *Regulus*.

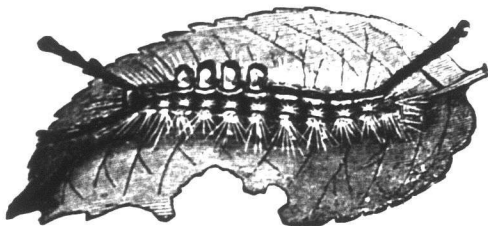
*Jupiter* is conspicuous as a morning star in the constellation *Sagittarius*. Early risers may get a view of him from three hours before until nearly sunrise.

The *Halifax Chronicle* recently devoted a leading article to amateur astronomy, with a plea for more attention in academies and high schools to this important subject. It recommends that each academy in Nova Scotia be provided with a small telescope. Such an instrument would be a boon, not only to the school, but to the whole neighborhood. It is surprising how few people of intelligence know the courses of the planets, or even have an approximate idea of the structure of the heavens.



## FERNDALE SCHOOL.

No. XIX.—THE TUSSOCK CATERPILLAR.



ORGIA LEUCOSTIGMA (SH. &amp; ABB.)

Cold news for me;  
Thus are my blossoms blasted in the bud,  
And caterpillars eat my leaves away.

—Henry VI., Pt. II., Act III., Sc. I.

T. How many have seen the caterpillar sketched here?

(A number of scholars raise hands.)

T. Where?

S. On the leaves of the apple trees.

ANOTHER S. And on plum and pear trees.

T. I suppose you have. They have sometimes been too numerous in parts of our province and have been especially injurious to the apple trees. Compare the drawing with these specimens preserved in the small vials which you will please pass along the class. How long is the caterpillar?

S. About an inch.

T. Describe its tussocks or tufts of hair.

S. Two long black tufts stand out slanting like straight horns from near its head, and a single one from the other end. Four yellowish white brush-like tufts stand up vertically on its back; and there are long, fine, yellowish hairs in clustered loose groups all along each side.

T. Very good. Describe the color of its skin.

S. Yellow, with the head and two tubercles on the hind part of the back, red. There is a narrow blackish stripe along the back; and a broader but fainter one along each side.

T. Correct enough. They were hatched from eggs about the end of May, and the young ones immediately commenced to eat the opening leaves.

S. Yes, and if you shook the leaves they would fall off and hang to them by a fine thread of silk like a spider's web.

T. Correct. About the middle of July they are full grown, and proceed to spin their cocoon inside of a leaf or in the crevices of the bark of trees. By the first of August they are hatched. The female is simply a huge ugly body with feet but no wings. It

gets out of its cocoon and remains upon it until it deposits its eggs, from 300 to 500, in a frothy mass like spittle. This frothy substance very rapidly becomes hard and firm, and the insect dies.

S. If it has no wings it cannot fly?

T. True. The female cannot fly. But the male is a gaily winged moth. Here we have him pinned in our collection.

A second brood is soon hatched; they complete their growth about the end of August. The moths from the second brood deposit in autumn the egg masses which are hatched next May.

S. Will the frost freeze the eggs and kill them?

T. Not "kill them" under ordinary circumstances, as the frothy parchment by which the eggs are covered up is a good protection from sudden changes of temperature and wet. How would you fight them?

S. I would search for the empty cocoons with the egg masses upon them during the winter when the twigs of the tree are bare and destroy them.

T. Very good. But don't on any account destroy the cocoons of *this* moth which may have no egg mass upon them. Can you guess why?

S. Perhaps the moth has left it for good and all.

T. Not exactly. The female chrysalis is likely to be yet within the cocoon in such cases.

S. Then they should be killed before they come out.

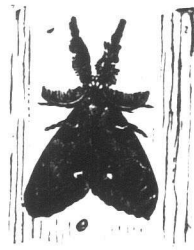
T. No. Any female chrysalis which does not come out and deposit its eggs before winter must be dead already, and therefore need not be killed again.

S. But why should we be so careful about not destroying what is destroyed already?

T. Because the chrysalis was probably destroyed by small parasitic flies which laid their eggs in or on the body of the caterpillar. When those minute eggs were hatched the small larvæ fed on the substance of the body of the chrysalis of the caterpillar and probably ate it all up. The parasitic larvæ then went themselves into the pupa state, thus leaving a number of minute cocoons within the larger one, all ready to burst out as flies next May to hunt for more Tussock Caterpillars to deposit their eggs upon.

S. Then the cocoons found in winter *without* egg masses, are either empty male cocoons, or destroyed female cocoons filled with the pupa of next summer's enemies of the caterpillar.

T. Correct. Our great Canadian entomologist, William Saunders, says there are no less than *nine* different species of four-winged and two-winged flies parasitic on our Tussock Caterpillar.



THE MALE MOTH.

### HINTS FOR THE SCHOOL ROOM.

#### I. Physiology—Digestion.

##### INTRODUCTORY.

T. If we took no food for a number of days, what would be the result?

S. We would waste away and at last die of starvation.

T. How could it be shown that we would waste away?

S. Why, everyone could see it; and if we weighed ourselves from day to day, the scales would show that we would be growing lighter. There would be a loss of several pounds each day, very likely.

T. You are correct; and that fact illustrates the important truth that we are constantly wearing away, and that food is necessary to supply the constant waste. Now let us try to see how food becomes a part of our bodies. If you were to cut your hand very deeply would you find in it any potatoes, or bread, or beef, or fish?

S. No; it would be all flesh and blood and bone, and—

T. Then all the food we take must change into something else different from what it may be when we eat it. What would you call that change?

S. It must be dissolved, when taken into the substance of the body and changed to blood and flesh.

T. Yes, the dissolving we may call *digestion*, and the change *assimilation*. But why should digestion be necessary?

S. Because potatoes, or beef, or fish, or bread could not go into the currents of blood which are rushing all the time through every part of the body building up anew every little particle which is wasting away.

T. Very good; I am glad you did not forget our lesson on the circulation. All the food which is taken into the substance of our bodies must first be dissolved and changed into some liquid form. And the region of the body in which these changes are accomplished is called the *alimentary canal*. What is the meaning of *aliment*?

S. Food.

T. Then the alimentary canal may be called—

S. The food canal.

T. When the food is in any portion of this canal is it in the substance of our bodies?

S. No. If a person has his mouth full of biscuit, the biscuit is in his mouth—not in the substance of his body, of course.

T. Then the alimentary canal, that is the cavity of the mouth of the stomach and of the intestines are all outside of the substance of the body?

S. It looks like it.

T. You are right. The alimentary canal is really a tube of varying size and character, and its cavity is really as much outside of the body as is the surface of our skin.

S. And is it covered with skin like the outside of the body?

T. It is. But there are a few important differences in the nature of this skin. Instead of skin, it is called the *mucus membrane*. Its outer or scarf skin is so thin that the blood filling the millions of minute capillaries are quite visible through it. Proof: open your mouth and note its color.

S. Red.

T. The outer skin of the body has a great number of sweat glands in it. The skin of the inside of the alimentary canal, that is the mucus membrane, has a still greater number of minute glands in it; but instead of secreting and pouring out perspiration, a great many of these pour out mucus which is a clear slimy fluid and forms a portion of the spittle in the mouth. It serves to keep the mucus membrane moist.

S. It is because the skin of the alimentary canal is filled with so many glands pouring out mucus that it is called the mucus membrane, is it?

T. You are quite right; it is just so. But in different parts of the canal there are other glands which pour other liquids of great importance in dissolving our food. We shall consider these in our next lesson.

#### II. Ptyalin.

T. We come to the conclusion already, that the food all through the alimentary canal is really as much outside of the substance of our body as if it were applied like a plaster to the outside of our body, but the mucus membrane is a kind of skin which pours out from itself substances which help in liquifying the food; and the thinness of its scarf skin permits of the absorption of this liquefied food into the substance of the body very easily.

S. Is not the food digested in the stomach?

T. It is digested in every part of the alimentary canal.

S. Is it very long?

T. About twenty-eight feet in a full grown man.

S. Why! that would reach from one side of our school house to the other.

T. Yes, and all the food we take will pass through that twenty-eight foot tube unless it is dissolved and absorbed through the mucus membrane. Some food dissolves in the mouth, more in the stomach, and

some more still in the intestines. How shall we study it?

S. Begin with mouth.

T. Very well. The mouth, the pharynx of the back of the mouth, and the gullet make up the first *foot* of the twenty-eight. Now, what do you do with the food in your mouth?

S. We chew it up fine with our teeth, mix it with mucus to a paste, press it back to the pharynx in a little lump and then we can't help swallowing it at a gulp.

T. Whenever the bolus of food is pressed back to the base of the tongue against the pharynx, the muscles right above the bolus contract and press it down the gullet; and for nine or ten inches a wave of contraction follows after the bolus until it is pushed into the stomach.

S. Why do the muscles contract in that way?

T. Why do you wink when I pass my hand near your eye? Why do you cough if anything is in your throat which should not be there? Whenever any part of the body feels anything touching it, it commences to act in some way as if it possessed a kind of knowledge that it had a particular duty of its own to perform. Very often we find that the different parts of the body appear to know and to do their duty better than the man himself. You can understand a fuller explanation of these things when you are more advanced.

But there was a mistake in the description of mastication given me. The food is mixed with more than the *mucus* of the mouth. If you only think of it, you can now notice a flow of liquid in your mouth; this flow is increased in the process of mastication, and you know it is called—

S. Saliva.

T. Right below each ear and behind the jaw is a salivary gland—called the *parotid* gland. When you had the "mumps" you could feel this gland swollen up into a great painful lump. Well, this gland makes saliva from the blood and pours it out through a small tube right opposite the second upper back tooth on each side of the mouth. Underneath the corner of each jaw is another pair of salivary glands called the *submaxillary*, and under the tongue we have a third group—the *sublingual* salivary glands.

S. And does the saliva digest any food?

T. The saliva contains a substance called *ptyalin*, which rapidly changes starch, especially if cooked, to sugar—a kind of grape or fruit sugar or glucose.

S. Is this sugar different from what we sweeten our tea with?

T. It is slightly different. It is just the kind of sugar that can be absorbed by the mucus membrane easily. It does not taste so sweet. But cane sugar

itself must be converted into a glucose sugar before it is a food, and the mucus secreted in the alimentary canal very rapidly and easily brings about this change.

S. The digestion in the mouth then, is the change of insoluble starch into soluble sugar.

T. Precisely. Prove it. Take a piece of biscuit or dry bread and chew it for a little time in your mouth. At first it is not sweet; gradually it becomes sweet. It that not so?

S. Yes, it gets quite sweet. There is starch in potatoes, and they get sweet also when you chew them.

T. You can try another experiment when you go home. Pour some boiling water on a little starch, and when the thick sticky jelly-like paste is cool enough, put a teaspoonful in your mouth. It will be tasteless at first; but by mixing it with the saliva it very rapidly becomes both sweet and liquid. Now, what lesson should we learn from this?

S. That we should chew very well all foods containing starch, such as potatoes, porridge, bread, rice, sago and the like, so as to mix saliva with every particle of the starch in them.

T. Should we "bolt" such food in a hurry?

S. No, we should keep them in the mouth until we produce and can enjoy their sweetness, and then swallow.

T. Can you "bolt" a cracker in a hurry?

S. You might choke, it is so dry, unless you took a sip of tea with it.

T. Which would be the better way to get the nourishment of the bread, to chew it until moistened with saliva or to moisten it with tea?

S. To moisten it with saliva. If you moistened it with a liquid to enable you to swallow, the starch would not be converted to the soluble sugar.

T. See who can make a good rule of diet to prevent this form of indigestion?

S. Eat breads, and all starch-bearing food without mixing with drinks. Take the drinks only after the bolus lubricated with saliva alone has been swallowed.

T. Very good, remember that and grow to be a strong and healthy man.

In our next lesson we shall note what kind of digestion is accomplished in the *second foot's* length of the alimentary canal, the stomach. I may mention however, that in the saliva of most animals there is no *ptyalin*. What do you think of that?

S. I suppose they don't need it—They don't eat biscuit—They may "bolt" their food as fast as they can and it would not make any difference. I suppose their food requires to be ground well for stomach digestion all the same.

**What Can Be Omitted.**

He who makes two blades of grass grow where one grew before, is a benefactor of his race. But the way to get room for the second blade is to pull up the weeds that take the place it ought to have. Mr. A. E. Frye has been pulling up a few geographical weeds of "comparatively worthless knowledge upon which fully three-fourths of the pupil's time is wasted." Notice "fully three-fourths"! That is a good deal of time to throw away "wasted;" isn't it too bad? Teachers are paid to do "wasted" work. "Time"! precious time! For what time is more precious than the few years of school life, between seven and twelve? We can better afford to waste time when we get old, but what punishment should boards receive who by legislative command require pupils and teachers to waste their time? But this is preaching enough for to-day. Here are the items:

1. Book definitions of natural forms of land and water.
2. Heights of mountain peaks and ranges; lengths of rivers; names of unimportant peaks, ranges, rivers, capes, peninsulas, etc.
3. Answers to the countless text and map questions which the teachers neither know nor care to know.
4. All details of relief that do not affect the general rainfall and drainage; and all details of coast lines which do not affect climate, or are of no commercial importance.
5. All systems of construction lines which are not discovered (by the pupils) in the general directions of coast lines, or in the trends of highlands.
6. Lists of products—export and import—except those of chief commercial value.
7. Names of the hundreds of towns and cities which are not of commercial, capital, or historical importance.
8. Area of countries, states, and groups of states together with exact political boundaries of the same.
9. Population of cities and countries, and statistics of races, governments, and religious denominations.
10. All knowledge that is poured in merely for examinations, and which the pupil is not expected to remember after he leaves school.

What have our readers to say concerning this? Our columns are open for replies.—*The School Journal*.

**Singing in Public Schools.**

The Wisconsin *Journal of Education* admits that in some respects the schools of the United States seem to be behind those of England. Special reference is made to vocal music, from which we quote: "Professor McAllister said his attention had been especially

attracted to the singing in the Board Schools and to the excellence in scientific instruction. Instruction in the former is very thorough, the 'Tonic Sol Fa' system being universally used throughout England. So far as my observation went, the results are very striking. Universally the children sing well, and in the higher standards difficult part music was sung by the children at sight quite readily. The English people, I think, value this training quite highly. It is a feature of the schools which more than any other reaches the home, and is having a marked effect upon the general culture of the great mass of the people."

**The Primary School-Room.**

DRILL TO CONNECT LANGUAGE WITH IDEAS OF POSITION AND PLACE, AND TO DEVELOP ATTENTION OR SPONTANEITY OF OBEDIENCE TO THE TEACHER'S COMMANDS.

The class is brought to the position of "attention." The teacher then gives the following orders, which are repeated until they are uniformly and simultaneously performed. Whenever some of the pupils appear to be getting fatigued the exercise should be suddenly changed, and nothing comes in better than a "physical exercise song" or a "motion song." They can hardly be too many or too varied in any primary department.

*Exercise 1.* Raise your right hand as high as the shoulder. Extend the forefinger. Let it point straight up—to the *zenith*. Let it point straight down—to the *nadir*. Let it point straight to the front—*level*. (Repeat with the left hand).

*Exercise 2.* Raise and extend the forefinger of your right hand. Place it on the middle of the palm of the left hand. On the top of the left thumb. On the fore finger. On the little finger. On the middle finger. On the middle of the back of the hand. On the nail of the thumb. On the middle joint of the middle finger. (Repeat right hand motions with the left).

*Exercise 3.* Raise your right hand. Raise your left hand. Put them on the desk, one touching the right side, the other the left side. Move the right hand from the right side to the left of your desk. Move them both to the middle. Move them to the front. Move the right hand from the middle to the right end. From the right to the middle. From the middle to the left. Move the left hand from the left to the right. (Repeat right hand motions with the left).

*Exercise 4.* Point your right hand towards the zenith. Make it *vertical*. Point it to the nadir. Make it *vertical*. Point it to the front. Make it *horizontal*. Point it to the right. Make it *horizon-*

*tal.* Point it to the front. Make it slant upwards half way between the *horizontal* and the *vertical*. Point it to the right. Make it slant downwards half way between the *horizontal* and *vertical*. (Repeat the motions with the left hand.)

*Exercise 5.* Let us look out on the great world. Has it a right side and a left side? Let us see. Look all around the sky where it seems to touch the trees, the hills or the sea. Which side shall we call its right hand? It must be the same for every place? Well now, is not that side the side where the sun rises? The side from which the light comes? How glad we ought to be to have the sun come every day after the darkness. Well, let us all turn ourselves so that our right hand will be on the side where the sun rises. Where will our left hand be pointing? "Where the sun goes down." Now stretch our hands out horizontally—the right to the side where the sun rises; the left to where it goes down. The right hand points to what we call the *east*—the right side of the world; the left hand points to the *west*—the left side of the world. Point the right hand east—west—east—west.—Point the left hand west—east—west—east.—Point both hands out to the front. That is called the *north*. Point them both back as far as you can—that is *south*. Without changing your position, stretch both hands as strongly as you can, to the north—south—north—south;—east—west—east—west;—north—south—east—west.—

#### THE INTERPROVINCIAL CONVENTION.

The closing sessions of the Interprovincial Convention in St. John were marked by papers and addresses of great interest to teachers. In the afternoon, Mrs. F. W. Parker, of the Cook County Normal School, Illinois, gave an address on the Delsartian School of Expression; Miss H. C. Magee, of the Wisconsin Normal School, read a paper on Art in Education; Monsieur Vitrain, of Philadelphia, delivered a short address on the methods of the Berlitz Schools of Languages.

His Honor, Lt.-Governor Tilley, presided at the public educational meeting in the evening. The large hall of the Mechanics' Institute was crowded to its utmost capacity. Addresses were delivered by the chairman, by Dr. J. G. Fitch, of London, Sir Wm. Dawson, Hon. G. E. Foster, Minister of Finance, Hon. Mr. Ferguson, Provincial Secretary of P. E. I., Dr. Allison, President of the Convention, and Col. Parker. The eminent and scholarly attainments of many of these speakers, the earnestness and good sense with which they dealt with the different phases of educational work will be long remembered by those

who attended that memorable meeting. We can only find space at this late date for a full synopsis of Sir Wm. Dawson's admirable address which we commend to the careful attention of our readers:

#### SIR WM. DAWSON'S ADDRESS.

Sir William said that, without flattery, he doubted if he had ever attended such a remarkable meeting of teachers. He had before him remarkable specimens, speaking as a naturalist, of educational men and women. Since his address at a previous meeting on the History of Education in Nova Scotia, he had learned something about its progress in New Brunswick, which was equal to that in the sister province. In 1853, he visited New Brunswick as a member of a commission to revivify the provincial university, which was then in a moribund state. Among the commission's recommendations was the establishment of a school of engineering. Many of the recommendations of that commission had been carried out, and the university of New Brunswick was now in a satisfactory and progressive condition, while Mt. Allison had also made great progress. The schools of St. John were admirably organized, and the Girls' High School, of which he knew well both the principal and the work of the pupils, was the largest and probably the best organized in Canada. He had not referred in the previous address to college education. The more he thought over the title of the debate of last evening, "The Influence of the College on Industrial and Social Life," the more he saw in it. The industrial vitality of any people was always in proportion to the development of higher education, and the place which the people of any country could secure socially among the nations of the world was regulated by the same cause. You may search the world over and you will not find a country which has advanced to the height of prosperity and consideration among others that has not paid great attention to its colleges and universities. His own institution, McGill, had extended a helping hand to education for the ministry, the bar, and the practice of medicine, the teaching profession, etc. They had a school of civil engineering and mechanical engineering, and one of mining engineering, and another of practical chemistry. Was not McGill thus contributing to the industrial progress of the country? The wisdom of the public would be to give the smaller colleges also the means to do this. We were thus training our young men for the higher work, instead of having to import men from abroad. To do this well, a chain of connection was needed from the elementary schools up to the universities, and a reflex influence from the colleges on the schools. Sir William complimented Prof. Anderson on his

bold defence of Scottish colleges on Wednesday night, and showed how well Scotland carried these connecting links all through her educational system. The schools lent students to the universities, the universities provided the teachers of the parish schools, the schools trained the men and women, and they made the character and influence of Scotland. The method of training by the teachers of the lower schools was dwelt on by the speaker. In the college these bonds of discipline had to be loosened and the pupil fitted to teach himself and others in the world. This could only be done by specialists incorporated in a college faculty. The college had to reach all a young man's faculties, to make him "all rounded." How best to do this is a matter of debate, but there was no necessity of pitting one college subject against another—classics against history, etc. We must have them all. (Applause). If we have not them all, there is where the defect comes in. All these must be judiciously administered to a student. The junior year's work is on general subjects, or those most useful, with sufficient variety to develop each student's special qualities. Thus only would they be qualified to choose for themselves what lines of study they would pursue. Young men only begin to know their special aptitudes some time after entering college. At the outset they have often false notions. Touching on Dr. Schurman's remarks the other morning, Sir William said he fully concurred in the absolute necessity of scientific training and depreciated exclusive devotion to classical subjects, and also the unscientific methods of instruction often employed. Still, these subjects were of great value, and especially Greek. Greek was not a dead language. It was used in the live business town of Athens. It was largely the commercial language of the eastern Mediterranean. It is the most perfect of the Aryan tongues, and the more we can enter into its spirit the more we can improve our own language. It was the language in which was not only a very noble literature, but it had been selected as the vehicle of the teaching of Christ and His apostles. It was thus the charter of the Gentile churches. Again, Greek is the source whence we get most of our scientific terms. Personally, he found in his teaching that the man who had no Greek was at a disadvantage compared with the student who had even but a little Greek. You cannot cut off Greek without damaging the teaching of our sciences.

Another point. Language is one thing, literature another. The teaching of language in an elementary way is easy, and adapted to the minds of children. On the other hand any language in its higher philosophy and philological relations presents problems of the most scientific and far-reaching

character. So literature begins with mere nursery rhymes, and leads up to heights only to be reached by matured and cultivated minds. Nor can the literature of any people be separated from its history. They act and re-act on each other. These points must be considered if we desire to have correct views as to the teaching either of classical or modern languages, and this teaching should in all cases be itself natural and scientific.

The same principles apply to physical and natural science in schools, and in this connection Sir William complimented some of the teachers on the ideas expressed by them at one of the morning's sections. The schools in which there is a certain amount of practical science-teaching are those in which the best results are produced in all other branches. We need a variety of food. The science of cram was described to be the giving of food to a child for which it had no previous appetite and no subsequent digestion. Whatever you can get the child to assimilate mentally, in so far you have educated it. But impart that knowledge for which it has an appetite and digestion. Sir William closed his lengthy but admirable address by citing the advice Paul gave to Timothy, "Be gentle unto all men, apt to teach, patient; in meekness instructing those that oppose themselves." This embodied the whole moral influence of the teacher. Sir William took his seat amid loud applause.

For the Review:

#### A Plea For Music.

In arranging our public school systems it is too often considered, that when spelling, grammar, arithmetic and others are included, we have a course complete and useful, full enough to equip the student with sufficient material for his ordinary use in life. This is true in part, and I would not in the least undervalue these subjects, far other is my intent, but rather to make some suggestion, whereby the hours of study may be enlivened and brightened, with quite as successful results.

It is not natural for man to be satisfied with continual labor, with no recreation to lighten the turmoil of business hours. He goes to his work more contented and far happier after an evening of pleasure and enjoyment. And this is doubly true with children. Peep with me into the school-room, and look at the little upturned faces that greet every new comer. The thought instinctively rises,—“How fully they enjoy the sunshine of life.” And while the usual routine of work has great benefits and pleasure for them, I believe we may truly call music the sunlight of the school-room. As gymnastics

breaks the monotony of the school session, music comes to cheer and inspire.

It is in itself a wonderful art, powerful in effect, useful from an educational as well as pleasurable point of view, and mighty in its influence. I would therefore make an earnest plea for the instruction of music in our public schools, giving the reasons which have appealed so strongly to me as logical and clear, and worthy of attention.

First, consider the physical benefit. It is impossible to sing well without full, free respiration, and on this account, no exercise is more beneficial in strengthening the lungs. This means quickening of the circulation, purifying of the blood and nerves roused to activity.

As a mental discipline, quite a degree of energy is required in order to read a difficult piece of music at sight, and it has been said that mathematics can claim no superiority above the profound study of harmony.

No art so strongly stirs the emotions of child or man, as music. It appeals to the ethical side of his nature, and awakens a love for the beautiful, brightest and best. Mark the effect of a patriotic song; as the enthusiasm of the singer bursts forth, it rouses his audience to feelings of courage and loyalty, and inspires to noblest deeds of valor and patriotism. In our churches, music lends a charm to the service, filling one with a spirit of devotion and sanctity. As the soft breath of wind stirs to rapturous melody the silent lute, so music strikes the tenderest, deepest chords of the human heart, making them thrill with the purest, noblest emotions in nature. The influence of music in the home is so gentle and refining. What picture stays longer in memory's store-house, than the group around the home fireside, enjoying an hour in song. There, parents and children are knit, as it were, by a bond so united and sacred, that though time and distance may separate them, naught can efface the remembrance.

As a matter of discipline, music aids greatly in public schools; so much so that it has been said by prominent educators, one can easily tell by the deportment of the pupils, if it is not taught. Horace Mann used to say, "If your children are restless, do not scold them, but sing to them."

Still another feature supporting the advisability of school music, presents itself. It is an accomplishment to be able to sing at all; it is a great accomplishment for one to read music readily at sight, and sing with good expression; and this can be systematically taught and understood in school. In this way, many children, who could never have the benefits of private tuition, receive from a full course in the public

schools, knowledge sufficient to enable them to start toward earning a livelihood by that means. In Boston and other large cities, many churches draw their choirs from the public schools; and from the same source the Handel and Hadyn Society, the Apollo and Boylston Clubs, and other private musical organizations, recruit their numbers.

Then let me say in closing this first paper, give the children the happiness, the inspiration, and the many other benefits to be derived from the study of music, and allow a subject which touches the general public on so many sides its well deserved place in the school curriculum.

In a subsequent article, I will give some thoughts as to the best methods of teaching music in school.

M. U. G.

Truro, N. S., Feb. 2nd, 1899.

For the REVIEW.]

#### **Madame Kraus-Boelte and Her Kindergarten in New York City.**

This lady stands deservedly in the first rank of kindergartners, not only in America, but also in England as well as in Germany, her native land. The patrician character of her early surroundings register themselves in her cultured and high-bred manners which charm by their sweet simplicity. Her father was a lawyer, holding the position of judge or chief magistrate in Mecklenburg Schwerin, and later on in Hamburg, and her ancestors, on both sides, were distinguished for learning and ability. A large connexion made her home a literary and musical centre, fruitful in social cultivation. She was born in 1836, before the kindergarten was formulated, but its distinctive features, freedom, self-activity, æsthetic work and moral and religious culture were finely illustrated in this model household. When four years old, she began to learn reading, writing, dancing, sewing and knitting. The instruction which she received with her brothers and sisters, from accomplished and learned men was broad and thorough, and supplemented by daily excursions in which the children were systematically introduced to the wonders of nature, art, trades and manufactures. On returning home, they were encouraged to make experiments in reproducing what they had seen. She had a family of twenty-one dolls from two feet in length to one inch. The industrious, clever child made and took care of all their clothing, and in the apartments of her doll-house went through an elaborate form of housekeeping. At fifteen she was sent to spend a few months with one of the best families in Hamburg where the elegant surroundings were an education in themselves. On her return home, she devoted

from 2 till 4 P. M., which she was free to use as she pleased, to the entertainment of a large flock of poor children in a meadow near the house, rewarding those who had kept clean hands and face through the week with a penny, in addition to other benefactions. When she was eighteen her father's sister, then on a visit, by her account of Fröbel's kindergarten, aroused Marie's enthusiasm, and with her parents' consent she went to Hamburg to study with his widow. Seeing no chance to reduce her ideas to practice at home she concluded to go to England, to assist Madame Rouge in introducing the kindergarten among the poor and neglected, giving her services freely. When Madame Rouge left for the continent, Marie would not return home, but accepted a situation to teach the family of Chief Justice Lord Denman all the branches of education—and kindergarten. The happy years passed, until the eldest daughter was married and the younger children were beyond kindergarten age. The family, who loved her and appreciated her ability, would fain have kept her, but her love of the kindergarten work had become second nature and she could not relinquish it. She took up old and new studies, among others, modelling, under Prof. Miller, of Kensington Art School. He and others begged her to become an artist, but she says, "My one object was to do the best work possible in the kindergarten, knowing how much mediocrity there was, seeing with dismay how little kindergarten education was understood. I saw a difficulty arising in not having true, thoroughly-educated and trained kindergartners who would be able to train and teach others." Her first kindergarten was started in Lubeck with seven children, amidst great opposition; a few months saw the number increased to fifty-five. She had four beautiful rooms and a garden with a tent, under which in summer they worked and played. The mothers visited the kindergarten daily, in turn. She also trained her young girls for the nursery. So fine was her work, that Madame Fröbel exclaimed with tears in her eyes, "Oh! that Fröbel had known you,—could have seen you work; you are, in truth, his spiritual daughter." Her father dying in 1871, Miss Boelte came to America where she married Prof. John Kraus whose exhaustive "History of the Use and Progress of the Kindergarten" is referred to in Gen. Eaton's report as United States Commissioner of education. The perusal of an article in a Berlin paper referring to Kraus' "History" led in 1870 to correspondence on a subject of common interests. They founded in 1873 their normal training kindergarten and its associated model classes in New York. The pair are in perfect accord. Wherein speaking of "The Kindergarten Guide" as Madame Kraus-

Boelte's, she protested to the writer against being considered the sole author, saying, "It is as much Prof. Kraus' as mine; we work together." He is a learned man with progressive ideas and brimfull of enthusiasm. It is something to remember, the earnest gesticulation, the intense face and the grand sonorous bass voice, rolling out stern denunciation against all sham and show work in the kindergarten.

The whole institution is planned as a whole, to connect the kindergarten and the school.

Kindergarten, III Division, children	3 to 4 years old
" II. " "	4 " 5 "
" I. " "	5 " 6 "
Intermediate class,	6 " 7 "
Advanced " "	7 " 8 "
Elementary " "	8 " 10 "

Any under three years of course enter the third or lowest division. Unity of plan marks the education of the seven years passed in this institute.

The children have flowers and vegetables to grow in pots and boxes. In the cabinet are specimens of over eighty different woods and a great variety of natural objects. The development of shells gives the starting point for natural history. The earth from which the plant springs up is an object of interest and affords in its differences wide scope for observation and leads to many diverse fields of knowledge. The constant reproduction of ideas gained by the children in many different materials, as well as by drawing and modelling, and a certain order of classification, from the beginning of the simplest "gifts" and "occupations" is continued and extended logically. This kindergarten is indeed the connecting link between the home and the school, continuing the work of nurture and development while the actual inspection and perception of real objects is made the basis of instruction preparatory to the school. Providence has smiled, and she who began from benevolence, to kindergarten the poor, now has committed to her charge, with ample remuneration, the little ones of the best society in New York. More than three hundred ladies have graduated, and hold her diploma, which commands respect everywhere. The specimens of work on the walls prove by their exquisite neatness how well-earned is her reputation. Unfortunately some specimens bestowed upon us were lost in transit. They were marked by originality of design as well as beauty of execution. Many excellent "guides" have been prepared, but none, in our judgment, for the use of mothers and nurses equal to "The Kindergarten Guide," the joint production of this estimable couple, co-workers now for many years. The numbers of the second volume which is nearly, if not quite completed, fully sustain the reputation of the work as a whole. How delightful it would be to see mothers and women generally studying this "guide" to kindergarten practice, so clear and well arranged in combination with Fröbel's "Cossetting Songs" which breathe the very spirit of love and wisdom.

Halifax, N. S.

C.



## MEMOIRS OF A BUTTERFLY.

"'Tis greatly wise to talk with our past hours."

The approach of autumn and the conviction that I shall not survive the first sharp frost, would fill me with dismay did I not belong to the educated class of butterflies. I can submit to the laws of nature and die; I cannot submit to die and leave no record of my existence. But I am not called to this trial; my friend, the gadfly, promises to take charge of these memoirs, and to trumpet their praises through the insect world.

Of my infancy I remember nothing, except indeed it was said "I was a remarkably fine caterpillar;" but my own recollections begin at the moment when I burst from my chrysalis and found myself a butterfly. I belong to that splendid tribe called the Atlanta, my wings being glossy black, edged with the richest carmine. How well do I remember the morning of my first flight! From being shut up in a dusky prison, I suddenly found myself fluttering among flowers that I continually mistook for brother butterflies, the glorious sun shining without a cloud, thousands of insects sporting in his golden beams. How many friendships did I form on that happy day! How sweet were my slumbers when at night I folded my wings in a rose!

I will not describe my way of life. In a few days my rose tree became the resort of a selection from the most approved species of butterfly. The swallow-tailed, the peacock, the buckthorn and the atlanta kind took the lead on account of the splendors of their attire; the inferior orders were only bowed to at a distance, and, of course, every insect that was not a butterfly was regarded with the utmost horror, except always the gadfly, the wasp and the bee. The first was necessary as a news monger, and as all three carried stings it was not safe to despise them. Every day the coterie on the rose tree formed a party of pleasure to visit a different spot in the garden. Sometimes we danced quadrilles in the air, sometimes we formed a party for conversation beneath a myrtle-tree; occasionally, for the sake of his honey, we invited an old bee to join our picnics, but so much did we fear he might presume upon the honor and join us when it might be unpleasant to recognize him, that we only invited him twice. This delightful life lasted for a month; towards the close of that time weariness stole over us. Pleasure was the sole object of our search, and having exhausted all we knew, the inquiry was, "What should be done next?" Labor was out of the question; our high birth and refined habits equally forbade it. We had, therefore, no resource but to quarrel among ourselves. Jealousies, rivalries and

bickerings now disturbed the rose tree. For myself, I made satirical verses on all parties. I was so vexed at the disturbed state of our politics that I contrived to make myself the head of a party, whom I drew off and established in a myrtle tree. Soon after two of the party met with an untimely death; one was crushed by a little ruffian of a school-boy, and the other took cold by venturing into a damp lily.

For the past fortnight my troubles have been of a personal nature. I feel the approaches of old age, grave thoughts will obtrude upon my mind, and on reviewing my past life I almost suspect that the despised ant and bee have been more honorable insects than myself, because more useful. I have enjoyed much pleasure, but then it is over, and the recollection is but cold comfort. I have been greatly admired; I am not sure that I was ever loved. I cannot help wishing I had a few kind actions to remember, but I cannot call any to mind. I certainly once felt ashamed of my party for scoffing at a poor black beetle (it could not help its ugliness), but then I did not use my influence to protect it. I did certainly once wish to relieve the anguish of a dying moth, by lifting it from the gravel-walk to a rose-leaf, but then I abstained for fear of soiling my wings. Well, if I might again emerge from my chrysalis I would live a very different life, but as I can not I must hope that the posterity of butterflies, to whom I dedicate these memoirs, will profit by my experience and my regrets.—*Sarah Jewsbury.*

## A Petrified Stump.

An item in last issue of *The Enterprise*, referring to the petrified stump lately excavated in Fraser's freestone quarry in this vicinity, (New Glasgow, N. S.) induced the writer to visit the quarry in question a few days ago. The fossil stump was found resting upon the edge of an excavated ledge, forming, as it were, a shelf in the stratified rock of the quarry bank. Its position thus exposed to view several of its roots and rootlets, some of which were distinctly traceable more than twenty feet from the stump. The natural way in which these rock-embedded roots are disposed, show, beyond doubt, that they rest where they grew, and that the stump has not drifted to its present position. The stump itself is a stump literally, for, unfortunately for the curious geologist, it is truncated by a horizontal plane rather below where the roots begin to divide, the whole of the trunk above that plane being wanting. The trunk must have been one of unusual size, for the stump measures about three feet across the top, its great roots bearing witness to how firmly the ancient

forest giant was anchored in the soil. What particular genus of giant it may have been seems pretty clearly indicated by the arrangement and appearance of its roots, for the stump sends off four enormous roots, each of which sub-divides into two small ones. This regular branching of the roots is characteristic of a remarkable tree of the carboniferous period, known as the *Sigillaria*, so-called on account of the peculiar seal-like marking of its back, from the Latin *sigillum*, a seal. That this is the true character of the missing tree is further shown by the spots or pit-marks on its roots—an appearance distinctive of the *Stigmaria* root—the fossil rootlets to which these marks are due being still in some places visible. In the sandstone, therefore, of which this fossil stump consists, we have probably preserved a cast, as it were, of the stump and roots of a gigantic *Sigillaria*. If this view be correct, then could we transport ourselves in imagination back to a period towards the close of the carboniferous era, our fossil stump would be seen under very different conditions. The rocky bed on which it now rests would then appear as a swampy flat, reeking under a tropical sun, and in place of the stump would rise a tall and graceful tree, strangely different from modern vegetation, with its trunk fluted like a corinthian column and covered with grassy leaves. But earthly beauty was transient even in those remote days, and the beautiful *sigillaria* perishes, for an inundation of sand to the depth of two feet or more has overspread the swampy flat, above the sand the tall trunk decays and finally snaps off, and to complete the desolation the hollow stump fills up with sediment. Then comes the last event in its rock-written history. For fresh inundations of sand crush it beneath their ponderous mass and shut it out for ever from the light of day, unless, perchance, disinterred in our own prosaic age by the pick-axe of the quarry man, it returns to tell the geologist the strange story of its burial.—*E. MacKay in the Enterprize.*

#### Teachers' Salaries.

A correspondent in the *Toronto Educational Journal*, cites a case which may find many parallels in other parts of the Dominion, he says:

"Last year I engaged in a good country school at a salary of \$350 per annum. The inspector used his influence, however, to break the engagement on the plea that so large a school needed an experienced teacher. I was offered another school shortly afterwards at a salary of \$325, and I foolishly accepted for fear I should not get one, being led to do so also by the hope of an advancement next year. Now, although I gave good satisfaction to trustees and

inspector, raised the standing of the school considerably, and won the confidence of both parents and children, I was refused an advance on the ground that 'we can get lots for a smaller salary.' I told them to advertise. They did so, and received about twenty applications. I heard them read; some of them were simply abominable. The trustees were all in favor of one young lady, but because another was willing to engage for \$25 less, the latter received the appointment. She enters on the noble work of teaching for the paltry sum of \$275 a year—far less than is given to any ordinary farm laborer. Who is responsible for this?

One of the trustees said to me afterwards: 'You teachers have yourselves to blame for the small salaries that are paid. You cannot blame us for getting a teacher as cheaply as possible. Now most of the applicants here were pupils of the Model school. Had they all agreed to apply for a certain sum, one of them would have got it anyway. All their testimonials were good. It was only the toss of a copper who would get it, and the one who did might as well have had a reasonable salary as not. I got applications naming a certain sum and cards in a few days afterwards, offering to take \$25 or \$50 less. Thus you cut one another's throats.'

I am out of a school because I refused to take less than my services were worth, and I would chop cordwood for a living all winter rather than resort to such tactics."

#### Daily Bread.

Excessive anxiety and gloomy anticipation are the bane of many lives. Troubles are brooded over that never come, or, if they come, are not half as bad as was imagined. Few are content to live day by day and hour by hour, taking things as they are sent. A different course, however, is foolish as well as wrong! "Daily bread" is what we need. Would we not count him a fool who would eat and drink for to-morrow? Who dresses for to-morrow? Is it not equally foolish to bear the trials of another day as well as those that belong to the period through which we are passing? "As thy day." God measures out a portion to each person, and gives it as he is able to receive it, and according to promise. "So shall thy strength be." It is grace according to need or supply, as God orders the condition—not as man makes it but as God appoints it. He who falls into line finds the back suited to the burden. He who violates the Divine arrangement suffers by increased worry and vexation and by being out of joint with the purpose and operation of the God of Providence and grace.

**N. S. Summer School of Science.**

The committee of the Summer School of Science, which met in Halifax recently, accepted the generous offers of the Parrsboro people and trustees, and definitely settled on that town as the next place of meeting. They could not meet in a place surrounded by greater natural advantages—the advantages that go to make their plan of teaching science successful. We trust that among the many excursions they plan, there will be one to Amherst. We have to show them, first of all, Amherst, then, our marshes, our old historic landmarks, forts Lawrence and Beausejour, a submerged forest, etc., and also our sympathy in their great aim—that of making themselves better teachers. We trust the Cumberland teachers will make every sacrifice to be present and thus show their appreciation of the honor done our county by the N. S. S. S. of Science. Can we not send 100 teachers from Inspectoral District No. 10?—*Amherst Gazette.*

**AMONG THE ACADEMIES.**

The students of the Halifax academy are going to raise funds for the purchase of a piano for use in the convocation hall. Pictou academy procured a piano for the same purpose two years ago, the funds being raised by concerts, etc., conducted principally by students. On Feb. 4th, the Pictou amateur dramatic club played *Esmeralda* to a splendid house in the convocation hall—the proceeds to go towards the mounting of the birds and mammals of the province for the academy natural history museum. On a previous occasion the *Merchant of Venice* was put upon the stage by the third year class who were studying the play according to the prescribed high school course. It was a great success from both the histrionic and financial points of view. It also stimulated greatly a thorough study of the play in class. The Digby academy has invoked the aid of the press to arouse public interest in its projected museum work. Colchester academy has already made a good beginning, and so has the New Glasgow high school. Notes of progress in these or any other lines will be greatly welcomed by the editors, who will have much pleasure in giving condensed summaries of them from time to time.

A FEW days ago, a circular from the I. C. R. authorities, informed conductors that all who did not learn to write grammatically and spell correctly would be reduced, and that all brakemen who could not write grammatically and spell correctly would not be promoted.

**PERSONAL NOTES.**

William S. Calkin, B. A., 1887, of Dalhousie College, has been appointed assistant professor of Chemistry at Cornell University. Mr. Calkin is a son of Principal Calkin of the Nova Scotia normal school.

The prize for the best collection of home-made physical and chemical apparatus exhibited at the Nova Scotia Summer School of Science 1888, has been awarded to Mr. John H. McMillan of the Pictou academy.

Professor F. H. Eaton, M. A., of the Nova Scotia normal school, Truro, is president of the Summer Science School of 1889, which is to be held at Parrsboro. Professor J. B. Hall, Ph. D., of the same institution, is secretary. Intending students should communicate their intentions as early as possible. The programme of the school will be issued at an early date.

Mr. Burton Foster, second teacher in the Collegiate school, Fredericton, N. B., has been promoted to the Principalship of the school. Mr. James Palmer, of Chatham high school, has been made second teacher.

Professor Alexander of Dalhousie College, has been appointed to the professorship of English literature in Toronto University at \$4,000 a year.

The death of Mr. John Raymond, late Principal of the Kings County, N. B., Grammar school occurred at Hampton recently. During his long service as a teacher he sent out a great many young men well equipped with educational advantages, who in the different provinces will hear of the death of their teacher with regret.

**QUESTION DEPARTMENT.****Questions and Answers.**

M. B. H., TRURO.—(1) Should a student of telegraphy rest the arm, at or near the elbow, while practising? (2) Which is the better for a young man to study, telegraphy, or stenography and typewriting? (3) Where may they be studied?

(1) Some operatives do not rest the arm at all; but the majority rest the muscular part of the fore-arm upon the table, allowing the wrist to be perfectly limber.

(2) Which of these will be best will depend upon the inclination and ability of the young man; some might succeed at one but not at the others. Shorthand (with type-writing) is the more remunerative, but requires greater ability and a longer preparation.

(3) A glance at our advertising columns will show where these arts may be studied with advantage.

A. F.—Is "Kocale" a misprint for *Kocab*, the Arabic name for *Beta Ursæ Minoris*, in the January article "Among the Constellations?"

ANS.—It is; "b" was read "le."

E. J. L.—"Can you give a lesson on digestion for the school-room?"

ANS.—We give one.

#### LITERARY NOTES.

Dr. Honeyman, F. S. Sc. (Lond.), F. R. S. C., of the Provincial Museum, Halifax, has published notes of discoveries of Atlantic sponges in the *Presbyterian Witness*.

The *Pietou News* is publishing an anonymous serial—"The MacDonald Family," dealing with topics of to-day, which exhibits much literary power.

Bliss Carman is about to publish in Fredericton, N. B., a limited edition of an elegy by himself, on Matthew Arnold. It is to appear in the form of a trilogy, and to be printed on large vellum sheets.—*The Bookmart*.

M<sup>rs</sup>. Marwedel, the distinguished kindergartner, of Washington, D. C., and more recently of San Francisco, Cal., has prepared a series of games and charts for home and school use, based on the most approved principles of kindergarten training, and intended to connect manual training with the home and primary school. These games and charts are also arranged to teach form and color. D. C. Heath & Co., Boston, will publish the valuable aids at once.

Many educators, who would be glad to use science in the training of young pupils, if they knew just how to go about it, will be interested in the practical directions given in an article on "Natural Science in Elementary Schools," by J. M. Arms, to appear in the March *Popular Science Monthly*. Mr. Arms writes with a full appreciation of the true aims of science teaching, and from an experience of ten years in the work.

Sir Walter Scott's *Lay of the Last Minstrel*, an edition of which, edited and annotated by J. E. Witherell, is to be published by D. C. Heath & Co., Boston. It will be accompanied by a map, expressly prepared to illustrate the poem.

The Rev. Arthur C. Waghorne hopes to be able, next year, to treat of the berries and fruits of Newfoundland in a much larger work. He has also in preparation a complete list of the flora of Newfoundland and Labrador, as far as it is known. He hopes this may be published the coming summer. Hitherto, the most complete list has been that of Mr. Reck's, which only comprised 371 species besides varieties. Mr. Waghorne's contains 900 species of flowering plants, about 50 ferns and over 250 mosses and lichens. His list gives the common English, and as far as it is known, the common Newfoundland names; affords indication of color of flowers, time of flowering, and usual place of growth, and specifies those which are found on the Labrador coast, and there, as well as in Newfoundland, and notes which are found in Great Britain. It also includes the flora of St. Pierre and Miquelon.

#### BOOK REVIEWS.

A COURSE OF EASY ARITHMETICAL EXAMPLES for beginners. London: MacMillan & Co., and New York. This is a series of well arranged examples in the ordinary rules of arithmetic, which the teacher may use with advantage as an excellent supplement to the text-book.

CLASSICS FOR CHILDREN: TOM BROWN AT RUGBY. Ginn & Co., Boston, publishers. Few books have had a better influence in helping to form the character of boys than Tom Brown of Rugby. To introduce such a book in school with the excellent notes that this edition contains, is to cultivate in boys a taste for sound reading, to give a health and stimulus to school life, and to help to form character.

SCHOOL DEVICES, a book of Ways and Suggestions for Teachers, by Shaw and Donnell. New York: E. L. Kellogg & Co., publishers. Every teacher who wishes to give life and freshness to school work, should secure this book. It has bright suggestions on topics for the school-room, which are the results of a long experience in teaching. Such a book, judiciously used, cannot fail to be of great assistance to a teacher.

AN INTRODUCTION TO THE HISTORY OF EDUCATIONAL THEORIES, by Oscar Browning, M. A. New York and Chicago: E. L. Kellogg & Co., publishers. A book like this, introducing the teacher to great minds that have worked in the same field, cannot but be a powerful stimulus to him in his work. No better ideals could be presented to him than such masters as Comenius, Pestalozzi, Froebel and others.

TESTA: A BOOK FOR BOYS. Boston: D. C. Heath & Co. This book is a translation from the Italian, by the Italian class in Bangor, Me., under the supervision of Luigi D. Ventura, their instructor. It contains excellent reading, not only for boys, but their parents and teachers.

GILL'S SYSTEMS OF EDUCATION. D. C. Heath & Co., publishers, Boston, Mass. This is an excellent book for the teacher's library. It presents education as a science, which should be studied if success is to be achieved.

ALLEN AND GREENOUGH'S LATIN GRAMMAR; a new edition revised and enlarged. Boston: Ginn & Co., and London. Students of Latin will welcome this revised edition of an excellent grammar. Such additions and improvements have been made in the text as the advance of grammatical knowledge and the experience of the school-room have shown to be advisable. Statements of principles have been simplified without sacrificing scientific accuracy, while, for convenience of reference and general reference of text, it is a great improvement on previous editions.

PRIMARY WRITING, by Mara L. Pratt. Boston: Eastern Educational Bureau. Price fifteen cents.

This is an ingenious method of teaching the elements of penmanship to young children. The method is based upon a careful description of what is to be done, which is given in such a way as to create an interest—indeed, an enthusiasm on the part of the children in the work before them. Many primary teachers will find this little device extremely useful, saving them much time and trouble.

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L. E. WORTMAN, M. A., Professor of Modern Languages and History.

THE NEXT SESSION will open **THURSDAY, September 27th.** Matriculation Examination will be held on **WEDNESDAY, the 26th.** Applications for entrance or for information respecting courses of study may be made to the President.

XENOPHON'S HELLENICA BOOKS 1-4, by Irving J. Manatt, Chancellor of the University of Nebraska. Although we have only been able to subject this volume to a somewhat cursory examination we have seen enough to convince us that it is a work of great merit. The text is so beautifully printed that it is a positive pleasure to read it. And though, in general, we object to notes in editions of the classics for class use, we must confess that the comments contained in the one before us are excellent—learned, but not abtruse; full, but not tedious, and calculated to assist and stimulate the good student without saving trouble to the indolent. The relegation of the *critical notes* to the appendix is a very commendable arrangement, while the synopsis at the beginning of each chapter will be welcomed by the general student. The introduction is well written and gives a correct and interesting history of the struggle for supremacy between Athens and Sparta prior to the period which is embraced by the Hellenica. We can heartily recommend this edition of the Hellenica, not only to teachers, but also to private students, as an admirable edition of a history which supplies us with an invaluable picture of a most instructive period in the history of the Greek States. Published by D. C. Heath & Co., Boston.

A LATIN READER FOR THE LOWER FORMS IN SCHOOLS, by H. J. Hardy, M. A. STORIES AND LEGENDS. A First Greek Reader: by F. H. Colson, M. A. MacMillan & Co., London and New York. Like all the class-books issued by this firm these two readers are neatly bound and well printed. The selection of stories in both is exceedingly good, and they form an interesting introduction to the study of the Latin and Greek languages for pupils who are not prepared to read an author continuously. Though we cannot commend the vocabulary appended to the Latin reader, from its want of quantity-markings and its extreme conciseness, we feel bound to say that the notes in the Greek Reader strike us as being scholarly and serviceable. We are certain, from long experience, that the assistance of good dictionaries, such as Smith's Smaller Latin, and Liddell and Scott's abridgment, in the preparation of lessons such as would be prescribed from these Readers, would be much more satisfactory to the pupil, in his endeavour to reach a good translation, than what would be rendered by even better vocabularies than those which are contained in the Readers before us.

### BOOKS RECEIVED.

THE NEW BIOLOGY, (published by H. H. Carter and Karrick, Boston). THE TREE OF MYTHOLOGY, (publisher, C. W. Bardeen & Co., Syracuse, N. Y.,) and other books received will be noticed next month.

### EXCHANGES.

*The Planter's Monthly*, Honolulu, Sandwich Islands, Vol. VII., No II., Nov, 1888, contains a very interesting report from the committee of the Planter's Labor and Supply Company, on the manufacture of sugar. . . . *Science of Photography*, January, has a fine full-page frontispiece from a photograph of a moon-light scene. . . . *The Microscope*, January, is filled with a great variety of well indexed items. It contains a splendid portrait of Wm. Jerauld Lewis, president of the American Society of Microscopists, with a biographical sketch. . . . *The Guardian*, P. E. I., is coming to the front in giving good, popular, scientific editorials from time to time. . . . *The Dalhousie Gazette* issued a special number, in honor of George Munro, on the anniversary of his birthday. It contains a good portrait of this eminent patron of university education. . . . *The Halifax Morning Chronicle* has a fine all round editorial corps. Short, pithy editorials on current scientific and education questions are well interlarded with the usual polemical material of very varying quality. . . . *The Century* for February and *St. Nicholas* (*Century Co.* N. Y.), are at hand. The articles in both these magazines are becoming more and more distinctively educational in character. "The White Pasha" (Henry M. Stanley) with portrait and map of Africa is exceedingly interesting reading. . . . "The Story of a School" in *Popular Science Monthly* for February, (D. Appleton & Co., N. Y.) strikes a blow at formalism. . . . *Treasure Trove*, for February, (E. L. Kellogg & Co. N. Y.) has an interesting and instructive table of contents. . . . *The Academe* a bi-monthly magazine by the Academe company, N. Y., and the *Academy* issued monthly by the associated academic principals of the state of New York are excellent journals, devoted to the higher education. . . . *Wide Awake*, for February, (D. Lothrop & Company, Boston) is full of interesting and instructive sketches. . . . Dr. G. L. Goodale, Harvard University is contributing an interesting series of articles on physiological botany to *Garden and Forest*, (D. A. Munro, publisher, N. Y.).



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Copies of the Calendar for the Academic year 1888-89, may be had from the Registrar of the University.

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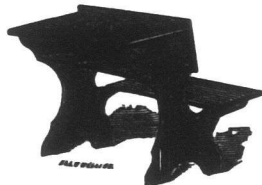
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