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MISSING

# The Educational Review.

Devoted to Advanced Methods of Education and General Culture.

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## EDITORIAL NOTES.

SEVERAL interesting communications and other matters are crowded out of this issue.

THE benevolent plan of Lady Tilley to establish a hospital for training nurses in connection with the St. John Public Hospital is meeting with a ready and generous response from all classes of citizens.

ON another page will be found the first paper of a lecture delivered by Moses H. Perley, Esq., in St. John, in 1841, and not before published. The introductory note is contributed by Mr. W. F. Ganong, to whom the readers of the REVIEW are indebted for the publication of this interesting chapter on our early history.

PROF. MACDONALD of Dalhousie University, who is well known as a very pleasing lecturer, and has a happy faculty in the choice of a subject, recently translated one of Lucian's dialogues before a Halifax audience in a wonderfully pleasing way, interlarding its practical teachings and humorous allusions with his own inimitable comments, which gave a spice to the whole that rendered it exceedingly enjoyable.

THE fare for the return trip from St. John to Toronto in July to attend the educational convention will be $20, to which will be added $2 — the association fee. Among other invitations extended are those to Right Hon. Mr. Mundella — Gladstone's Secretary of Education; John Stuart Blackie, of Edinburgh; Sir William Dawson, President of McGill University, Montreal; Rev. Principal Grant, Queen's University, Kingston; and other distinguished educationists. One evening session will be given to a comparison of American and Dominion educational systems — with Commissioner Harris representing the United States, and Hon. George W. Ross, Minister of Education for Ontario, speaking for the Dominion. Another evening will be given to a discussion of the education of women — the discussion carried on by six ladies, one for each of the four natural divisions of the United States, and one each for the Dominion and England.

THE headmastership of the Montreal High School is vacant. See advertisement in another column.

TH. H. RAND, D. C. L., who delivered the inaugural address at the opening of the arts department of McMaster University, Toronto, in October last, has spent two years in Great Britain and Germany, studying the systems of the leading Universities of those countries. The address is an excellent one, characterized by its broad and scholarly tone. We quote a few sentences:

"Our aim is to educate men and women. I employ the term in a very serious sense, and wish to put large meaning into it. To educate means to evolve faculty or power, and a liberal education means the evolving, not of one faculty, but of all faculties; in general, the faculty of intellect, the faculty of emotion, and the faculty of right reason, which latter faculty assumes a healthy and disciplined interaction of the functions of intellect and emotion. A liberal education recognizes all faculties essentially human, developing them by exercise, and co-ordinating them in exercise. Power, efficient life, is the end sought. Organized energy is power, is life; and he who would obtain it can do so only by undergoing a discipline which both develops the individual faculties and co-ordinates them in harmonious action."

We are glad to find Professor Eaton present in spirit with us although absent in the German metropolis as to the body. In the Halifax *Herald* we have had several communications from him, forcibly calling public attention to the advantage of educational advancement. In his first he emphasized the importance of the immediate introduction of manual training into our public system, thus reinforcing the efforts so well initiated by Supervisor McKay, of Halifax. Again, he made a trenchant attack upon the system of licensing teachers without exacting from them a professional training for which a normal school has been called into existence and supported, thus supporting vigorously the policy which we understood our educational authorities had determined to carry out as soon as practicable. And lastly he has given the results of a visit to many of the technical schools of Great Britain, with the course of study pursued in each, asking, in conclusion, whether some of these systems in manual training that are working so successfully in the mother country might not be incorporated, with suitable modifications, into a Nova Scotian or interprovincial system of industrial education. These letters are the more interesting, as the Nova Scotia Provincial Convention unanimously recommended the introduction of something in this direction into our own public system.

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Says the *Educational Journal* of Toronto: "When Sir Adolphe Caron, Minister of Militia, was in Toronto a few weeks since, he was waited upon by a deputation in which the Mayor and the City Inspector were included. The object of the deputation was to represent that there were in the Toronto public schools thirty-six companies of boys, who, it is claimed, are as well drilled as any of the volunteer regiments in Canada, and to request that these companies should be recognized by the Militia department as entitled to the usual government grant for equipment and drill instruction. Sir Adolphe said in reply, in substance, that he approved of the idea, and would advocate it before the government. Personally, he would like to give the boys of Canada a military education, such as that given in the schools of France, Germany, Switzerland, etc."

Good! Sir Adolphe. The military training of school children is one of the best forms of recreation. It is a splendid calisthenic for the physical personality; it is magical in developing the habit of orderly precision and prompt attention; and it marvellously tones up the tendency to flaccidity in patriotic stamina, which has marked the decay of every disappearing people. The boys from the Atlantic applaud heir comrades of Toronto.

The University of Toronto has decided to accept the leaving examination of the high schools as equivalent to their matriculation examinations. All the lesser universities will, of course, follow suit. We trust the educational departments of these provinces will not hereafter be too timid to take the step which will give us an authoritative leaving examination. Everything else is ready.

The students of Dalhousie University celebrated "George Munro Day" by an "At Home," which was attended altogether by nearly one thousand, from the Lieut.-Governor and Archbishop down to the freshman himself. The event made a decidedly greater impression on the public than the usual selfish drive and dinner. The arrangements were admirable. The refreshment rooms were always easily accessible; while a programme of music, song, or readings in different rooms, of scientific apparatus in others, experiments on light and electricity in the darkened physics room, and of chemistry in the chemical lecture room, etc., kept the ever promenading multitude very well diffused. The affair indicated a very high degree of managing ability; and it is generally hoped that the Dalhousie boys will continue in future so satisfactory a form of celebration.

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Rev. James Anderson, M. A., government intructor in Tonic Sol-fa music for the teachers of Nova Scotia, has, during the month of January, visited the schools of Lunenburg, Bridgewater, Mahone Bay, Liverpool and Milton, and speaks enthusiastically of the efforts made by teachers and trustees to secure all the instruction possible and of the success obtained. In his tour, commencing in Amherst, and passing through Truro, Pictou and New Glasgow, and the localities above mentioned, a great number of teachers have taken the Junior certificate of the Tonic Sol-fa college. The following have taken the next higher certificate—the Elementary—which indicates a very practical knowledge of music generally as well as of the peculiar features of the new system: Principal H. S. Freeman, B. A. (Dal.), Amherst; Miss E. W. Poole, Truro; Miss Ada Travis; Miss Sarah Logan, Pictou; Head Master, Peter Fraser, Pictou; Head Master, Alex. McArthur, Pictou; Miss Lorna Zuline Pugh, Lunenburg Co.; Miss Mary G. Vans, Bridgewater; Miss Annie Crouse, Bridgewater; Miss Ida Jean, Bridgewater; Miss A. H. Hamilton, Bridgewater; Miss Maggie Dimock, Bridgewater.

The following have taken the third degree certificate—the Intermediate—which indicates a high degree of practical musical ability: Miss Ada Travis, Miss Mary G. Vans, Miss Annie Crouse.

In February Mr. Anderson expects to go to Lakeport and Shelburne.

## Astronomical Notes.

### How Far to the Nearest Star.

A correspondent says: "I read the following in a magazine the other day: 'There is a train that travels from London to York every day at the rate of fifty miles an hour. If that train ran from York to the sun, and never stopped, day or night, it would take over two hundred years to get there! But suppose it travelled on from the sun to the nearest star, it would have to rush on at the rate of fifty miles an hour for more than forty-six million years before it would reach the star? I wish you would tell us in the Review something about this, especially how one might work out such a sum for one's self.'"

The nearest star is Alpha Centauri. It is a first magnitude star in the right foot of the Centauri. It is the third brightest star in the heavens — only Sirius and Canopus being brighter—but it is too far south to be seen from this latitude. My correspondent wants to know how he might work out for himself the problem of finding how many years it would take a train, travelling continuously at the rate of fifty miles an hour, to pass from the sun to Alpha Centauri.

Let us assume, firstly, that we know the size of this earth of ours. We certainly do know it very exactly. I shall call its equatrial semi-diameter.

Assume, secondly, that we know the sun's parallax —the value of it, I mean. As to what this thing called "parallax" is, and how its value is found, I must refer you to the astronomy books. This is no place for enlarging on that subject. But if you will be good enough to imagine the axis of the earth to be sticking out for a hundred millions of miles or so beyond the north pole; and imagine the sun, at his mean distance, to be stuck on this produced axis like an orange on a darning-needle; and then imagine that the sun, so placed, there is a sea-captain testing his sextant for index-error—if you will do these things well you will lay a foundation for a clear conception of what the thing is that is called the sun's parallax. When a sea-captain tests his sextant for index-error on the earth, he measures the sun's diameter and finds it to be—not so many inches or feet or miles, but—so many degrees of minutes or seconds—not far from thirty-two minutes it is generally found to be. Let us suppose our Solar Salt to do the same thing with the earth. He measures the angular diameter of the earth as seen from the sun. He writes the result on paper and divides by two. This is the angular measure of the earth's equatorial semi-diameter as seen from the sun when he is at his mean distance from the earth. This is the thing that is called the sun's parallax. In this article I shall call it S.

It ought to be clear from what has been said that S can't be measured directly by anybody on the earth. But other small angles can be measured that are related to it, and from their measured values its value can be calculated. And from its value we can calculate the distance of the sun from the earth. This is only a problem in right-angled trigonometry. Call the distance R. This is the hypotenuse of a right-angled triangle, of which r (see above) is the perpendicular, and S is the angle between R and the bars. So we have

$$R = \frac{r}{\text{Sin. } S} = \frac{r}{S \text{ Sin. } 1''} \quad \text{because S is very small.}$$

If you prefer it, you may take away Sin. 1″ from the denominator, and multiply the numerator by 206265 instead. To get R in miles, take the best values you can find in the astronomy books for r and s and work out the result for yourselves. For r use miles, for S use what you find which will be seconds.

Now for our star. Its distance, like the sun's, is got from its parallax. To find the sun's parallax is a very delicate job, but to find that of a star is a bit of celestial land-surveying far more delicate still. "The operation," says Prof. Young, of Princeton, "is, on the whole, the most delicate in the whole range of practical astronomy." In the case of the sun, the earth's radius is used as a base-line, and yet the angle subtended by this length of 4,000 miles is less than 9 seconds of arc, that is, less than the 200th part of the apparent diameter of the full moon. In the case of a star, the base line is the distance from earth to sun—a distance more than 23,000 times 4,000 miles—but, even so, the parallax is much less than that of the sun. Let us suppose it measured. We have now to find the star's distance D, knowing the base-line R and the parallax p.

Just as in the previous case we have

$$D = \frac{R}{\text{Sin. } p} = \frac{R}{p \text{ Sin. } 1''} \quad \text{because p is very small.}$$

$$\text{And as } R = \frac{r}{S \text{ Sin. } 1''}, \text{ it follows that}$$

$$D = \frac{r}{p\, s \text{ Sin.}^2 1''} = \text{number of miles in star's distance.}$$

Now if we put v for the train's velocity per hour h for the number of hours in a year, and y for the number of years we want, we shall have, by ordinary arithmetical analysis,

$$y = \frac{D}{v\, h} = \frac{r}{v\, h\, p\, s \text{ Sin.}^2 1''} = \text{number of years required.}$$

And so you see that to find what we want we need only know (1) the number of miles in the earth's semi-diameter, that is, r, (2) the rate per hour of the train, that is, v, (3) the number of hours in a year, that is, h, (4) the star's parallax, that is, p, (5) the sun's parallax, that is, s, and (6) the sine of one second of arc. This last you can get from a set of mathematical tables, or, as I said before, you may drop sin.$^{-1}$ out of the denominator and multiply the numerator by the square of 206265 instead.

With these six things given, it is only a matter of simple multiplication and division (or of addition and subtraction if you use logarithms) to find what is wanted.

To illustrate, let us take the Julian year as our year, and 3962·8 miles as the value of r, and 8·848 as the sun's parallax. (The Julian year is not our year, and these are not the best values of r and s, but I was asked to tell one how one might do the work for one's self and I don't want to spoil one's fun). If the star's parallax was 1 second, the number of years required by the train would be 43½ millions. But it is known that no star is so near as that. No, that statement is too strong. It is known that none of the brighter stars are so near as that, and no star of any kind is known to be so near. It was formerly supposed that the nearest one was as near as that, but later measurements of its parallax show it to be farther. The very latest, so far as I know—Elkin, 1883—makes Alpha Centauri's parallax $\frac{1}{0.75}$ of a second, with a probable error of $\frac{1}{0.75}$. (This is not the best value, but I was asked, etc., see above). This means—supposing the value I am using to be accurate—that most likely our train would take a little more than 64 millions of years to get there, but it might be ahead of or behind time by about 21 millions. So, to be sure of catching the passengers, the cabs might sometimes have to wait at the station for five million years.

A. CAMERON.

Yarmouth, N. S., January 20, 1890.

## Practical Chemistry.

BY J. BRITTAIN, NORMAL SCHOOL, FREDERICTON

### LESSON V.

(*a*). Between 60 and 70 chemical elements are known. Here is a list of the more common ones, with their symbols. When the element is known in science by a name other than the common one, it is given in brackets:

Oxygen, O; Sulphur, S; Nitrogen, N; Fluorine, F; Chlorine, Cl; Bromine, Br; Iodine, I; Phosphorus, P; Arsenic, As; Carbon, C; Silicon, Si; Hydrogen, H; Gold (Aurum), Au; Platinum, Pt; Mercury (Hydrargyrum), Hg; Silver (Argentum), Ag; Copper (Cuprum), Cu; Tin (Stannum), Sn; Lead (Plumbum, Pb; Iron (Ferrum), Fe; Zinc, Zn; Manganese, Mn; Aluminium, Al; Magnesium, Mg; Calcium, Ca; Sodium, (Natrium), Na; Potassium (Kalium), K.

Those preceding hydrogen in the list are non-metals or *negative* elements. Those following hydrogen are metals or *positive* elements. To hydrogen is assigned a neutral position. It will be noticed that the names of nearly all the metals end in *um*, while those of the non metals do not.

(*b*). We will now have some experiments with *compound* substances. Take the stopper out of the bottle labelled HCl, and hold the bottle with its mouth under your nose—not too close. The escaping *gas*, which irritates the mucous membrane of your nose, is the compound substance whose formula is HCl. The bottle contains a solution of it in water. Each molecule of the gas consists of one atom of hydrogen and one atom of chlorine. We can find its chemical name from its formula. A compound whose molecule consists of two kinds of atoms, as in this case, is denoted by the affix *ide*. The rest of the name is taken from the names of the two elements. Thus, the chemical name of this gas is *hydric chloride*. The word *hydric* shows that it contains hydrogen; the syllable *chlor* that it contains chlorine; and the affix *ic* that two different kinds of atoms make up its molecule.

Put a little water in the bottom of a small glass dish. Dip the end of a slip of litmus paper into the water. The paper remains blue. Dip a glass stirring rod into the solution of HCl in the bottle, and stir what adheres to the rod into the water in the dish. Do this three or four times. Then take a little of the mixture on the glass rod and taste it. It has a sour taste. If the sour taste is very weak, stir in some more HCl solution. Dip the litmus paper into the mixture. Its color is changed to red. What two substances were in the dish? Water and hydric chloride. Which turned the litmus red and had the sour taste? The hydric chloride; for we know water possesses neither property. Hydric chloride is called an *acid*. It is hydrochloric acid, the muriatic acid of commerce.

Break one-third of an inch off a stick caustic potash, KOH. Notice that this is a solid white substance, and that its molecule consists of three different kinds of atoms, one of which is oxygen. Such compounds are denoted by the affix *ate*. The chemical name then is potassium hydrate. The first word is the name of the metal it contains, the letters *hydr* denote hydrogen; and the affix *ate* implies that the com-

pound contains three different elements, one of which is oxygen.

Take about the same quantity of water as before, and drop the bit of KOH into it. Notice how readily it dissolves. Touch your tongue with a little of the solution. What do you perceive? A pungent taste. Dip into the solution the litmus paper which was reddened by the acid. Its color is changed to blue again. It must have been the potassium hydrate which produced this effect and had the pungent taste. It is called a *base*.

Now carefully mix the solution of the acid HCl and of the base K O H, stirring and testing with blue and red litmus paper as you mix them. When you have mingled them in the proper proportions, you will have a mixture which has neither a sour nor pungent taste, and which will neither change red litmus blue, or blue to red. How much of the acid is in the mixture? None; for there is nothing in it which has a sour taste or reddens blue litmus. Similarly, there is no base present. The acid and the base have *neutralized* each other.

Is there anything in the dish besides water? Yes; there is something in the water which has a taste resembling that of common salt. We will learn during our next lesson what this new substance is.

N. B. I shall, for the sake of brevity, often use the symbol of an element, which strictly only means an atom, and the formula for a compound, which properly denotes a molecule, instead of the *name* of the element or compound.

## Euclid. Book II.

### I.

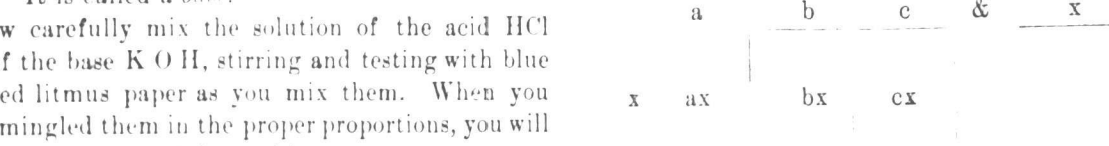
Euclid deviates from his general method in this book by demonstrating many of his propositions from nearly the same starting point in order to gain the advantage of a diagrammatic representation of the magnitudes compared. His method may therefore be called "the diagrammatic method." The logical method of the first book would allow a great contraction of the whole, as after the diagrammatic demonstration of Prop. 1, the most of the others require no diagram beyond the straight line and its parts mentioned in the enunciation. This neater and more logical method is called "the straight line method."

Geometrical notation was developed earlier than the algebraic, and accordingly has the more rude and cumbersome form. A line is named by the letters at the points at each end instead of by a single letter. As the algebraic notation at the present day is even more familiar to the young student of geometry than the older geometrical notation, there can be no loss of precision in demonstration by using the shorter and simpler notation, while there is a great saving in the effort of the eye to take in, and in the effort of the hand to write down, and in the time consumed.

Postulating, then, the algebraic notation, we proceed to give notes of an edition of the first ten propositions of Euclid II, more Euclidean than Euclid.

PROP. 1.

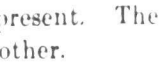
Particular enunciation: $(a+b+c+\&c)\,x = ax+bx+cx+\&c.$




(This proposition is proved diagrammatically as in Euclid. It is the fundamental proposition).

PROP. 2.

Particular enunciation: $(a+b)^2=(a+b)a+(a+b)b.$




*Proof*—

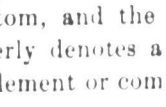
$(a+b)^2=(a+b)\,(a+b)$. (Definition of Square.)

$=(a+b)a+(a+b)b$. (Euc. II., 1)

*Q. E. D.*

PROP. 3.

The rectangle contained by a line into one of its parts is equal to the square of that part, together with rectangle contained by the two parts.




$(a+b)a=a^2+ab.$

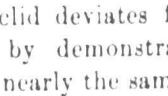
*Proof*—

$(a+b)a=aa+ab$. (Euc. II. 1)

$=a^2+ab$. (Def.)

*Q. E. D.*

PROP. 4.




$(a+b)^2=a^2+2\,ab+b^2.$

*Proof*—

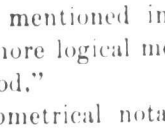
$(a+b)^2=(a+b)a+(a+b)b$. (Euc. II. 2)

$=a^2+ab+ab+b^2$. (Euc. II. 3)

$=a^2+2\,ab+b^2$. (Axiom).

PROP. 5.

The rectangle contained by the unequal segments of a line when cut internally, with the square on the *mean distance* of the point of section, are together equal to the square on half the line.




$(a+x)\,(a-x)+x^2=a^2.$

*Proof*—

$(a+x)\,(a-x)+x^2=(a+x)a-(a+x)x+x^2$ (II. 1)

$=a^2\times ax-ax-x^2+x^2$ (II. 3)

$=a^2$ (Ax. 3)

*Q. E. D.*

(*Mean distance* is the old term for *distance from the middle point.*)

## On the Early History of New Brunswick.

BY MOSES H. PERLEY

A portion of a lecture delivered before the Mechanics' Inst. St. John, in 1847, now for the first time published.

*Introductory Note.*

The indifference of the majority of our people, towards our local history, will inevitably be replaced in time by the deep and wide spread interest to which its rich and varied character entitles it. In the meantime, however, material of the highest historic value is being lost, and it should be a pleasant duty for us to preserve such parts of it as may add to the glory of our people, or the knowledge of our race.

The manuscript which is to be printed in this and a few following numbers of the REVIEW, is one most worthy of preservation. Its writer was one of the truest sons that New Brunswick has yet produced, and he lived with her interests always near his heart. He was exceptionally well situated for the investigation of the period which the MS. covers, both because of his near relationship to the leader of the first English settlement in New Brunswick, and his consequent knowledge of all the facts relating thereto, and also because he lived and was interested in those matters while many of the original Loyalists were yet living in St. John. No other man ever possessed such opportunities for the study of the early English and Loyalist Period in New Brunswick, and we cannot but feel that the manuscript below, embodies but a very small part of the knowledge which, could he have written it all, would have been so precious to us.

The manuscript includes two lectures, the first and about half of the second, treat of the period from 1492 to 1758, and having necessarily been largely compiled from printed works, contains little not to be found elsewhere. The portion printed below, and to follow, contains, we believe, material never before published, or at all events, not in an accessible form. The Ms. belongs to the author's son, Mr. Henry F. Perley, of Ottawa, and represents almost the only portion of his father's valuable papers saved from the St. John fire.

Moses Henry Perley was born at Maugerville, Dec. 31st, 1804. He was, through his mother, a grandson of Israel Perley, the leader of the Maugerville Colony as described below; and through his father, also named Moses, a grandson of Oliver, brother of Israel Perley. His early boyhood was passed at Maugerville, but he later received a common school education in St. John. He studied law and was called to the Bar in 1830.

From his youth he was very fond of the woods, and spent all the time he could spare from his profession with his gun and rod and Indian friends. He was a true lover of the forest, as the Indians knew when they made him their chief. He held several most responsible offices under both Imperial and Local Governments, and performed all duties in a manner most acceptable to the authorities and to the great advantage of his native country. He was a ready writer and most popular lecturer, his happiest theme being always "New Brunswick." He died in August, 1862, upon H. M. S. *Desperate* while engaged on official work off the coast of Labrador, and was buried with naval honors in the Episcopal burial grounds at Forteau, on the coast of Labrador, north of the Strait of Belleisle.

He had married in 1829, Jane, daughter of Isaac Ketchum, a Loyalist, and of their eight children, only one, Mr. Henry F. Perley, of Ottawa is now living.*

And now Ladies & Gentlemen, we have arrived at the period, when the settlement of this Province, commenced in right earnest, and the foundation of this glorious British colony, which is daily and hourly increasing in intelligence, wealth and prosperity, was first laid in a manner not to be again disturbed.†

In 1758, at the same time the last expedition proceeded against Louisburg, a British force was sent to take possession of this Harbour [*i. e.*, St. John.] This force, consisting of part of a regiment of Provincials & a Company of Rangers took possession of the ruins of the French fort at Carleton, and secured themselves there, in the best manner they were able, during the winter. After the winter had fairly set in, a party of the rangers under Captn. McCurdy, set out upon snow-shoes, to reconoitre the country, and ascertain the state of the French settlements, then very numerous on the River St. John. The first night after leaving here, they encamped on the side of a very steep hill near the present town plat of Kingston not far from the Belleisle. That night Captn. McCurdy lost his life, by the falling of a large birch tree, which one of the rangers cut down on the steep hill side — the tree came thundering down the mountain & killed Captn. McCurdy instantly. The party went on by the Belleisle, Washademoak Jemseg, and then along the bank of the St. John to St. Ann's Point (now Fredericton) where they found quite a Town. They set fire to the chapel, but a number of the French settlers gathered together, whereupon the rangers retreated, but being hotly pursued, they committed several atrocious acts upon people who fell in their way, to prevent their giving information. By reversing their Snow-shoes and making forced marches they got back safely to St. John. In the Spring of 1759 they rebuilt the Fort at Carleton which was then named *Fort Frederick* and respectable barracks were put up within it.

On the 30th Novr. 1759, Colonel Arbuthnot then commanding at Fort Frederick, wrote to the Governor of Nova Scotia, that 200 of the French inhabitants with two priests, had presented themselves to him, wishing permission to remain on their lands — their request was not however allowed.

In 1760 a party of rangers was despatched from Quebec under Captn. Rogers, to drive the French Settlers off the St. John. They performed the duty ferociously, ravaging the country & burning and

* For permission to publish this Ms. as well as for these particulars as to the author's life and services must join the present writer in thanks to Mr. Perley. A more complete and more worthy sketch of Moses Perley's life will yet appear. *W. F. Ganong.*

† We have throughout followed the original as closely as possible, even to retaining the punctuation and abbreviations. *W. F. G.*

destroying all before them. The French fled in all directions; Some of them making their way up the River toward Canada, were struck with the beauty and fertility of the country above the Grand Falls, and conceiving that they were not likely to be disturbed formed the settlement of Madawaska.

From all that I have been able to learn of this foray of Captn. Rogers and his rangers, I believe, that the less that is said about it, the better. *

In 1761, Fort Frederick in this Harbour was garrisoned by a Highland Regiment. In this year, the Harbour of St. John was first regularly surveyed, by Captain Bruce of the Royal Engineers, and I will now show you a large map which I have had executed from his survey.† At this time the Provincial Governments became anxious to secure the possession of the River St. John, and prevent the French from resuming possession of its fertile banks. New England had also a particular interest in the matter, as numerous attacks upon their borders, by the Indians, were generally planned and fitted out on this River.

The Governor of Massachusetts, in 1761, dispatched an exploring party, for the purpose of ascertaining the position of affairs and the state of the country on the St. John.

The leader of that party was Israel Perley, my grandfather, who was accompanied by 12 men in the pay of Massachusetts. They proceeded to Machias by water, and there shouldering their knapsacks, they took a course thro' the woods, and succeeded in reaching the head waters of the River Oromocto, which they descended to the St. John.

They found the country a wide waste, and no obstacles, save what might be offered by the Indians, to its being at once occupied and settled, and with this report they returned to Boston. In May 1762, a party of about twenty, came to this Harbour of St. John, in a small vessel from Newburyport. Mr. Samuel Peabody, Mr. James Simonds, and Mr. James White, were the three principal persons of this party.

They arrived on the 19th day of May 1762 and landed at Portland Point, where there was a small clearing and the traces of an old French Fort.

(Mention the skeletons at Portland Point.)‡

Fort Frederick was then occupied by a company of soldiers from Halifax, the Highland Regt having left. Major Gilfred Studholme was the commandant; the second in command was Captain Butler, the grandfather of Pierce Butler, the husband of Fanny Kemble. The party of adventurers who had arrived from Newburyport brought with them from that place the frame of a house. They landed and raised it on the 20th May, and on the night of the 21st they occupied it. Mr. Samuel Peabody, to whom the house belonged, lived in it afterwards, and it was subsequently occupied by Mr. White (the father of our excellent sheriff,) for many years.

(To be continued.)

* An interesting confirmatory reference to this same event is to be found on p. 102 of "Notitia of New Brunswick," a rare and interesting book published in St. John in 1838. *W. F. G.*

† A copy of this map, probably the very one shown by Mr Perley, is now in the Crown Lands Office in Fredericton. *W. F. G.*

‡ Here and there through the Ms. are references like this—evidently subjects of side remarks by the lecturer. *W. F. G.*

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For the Review.]

## Notes for Teaching Music by the Tonic Sol-fa Notation.

ELEVENTH PAPER.

REVIEW OF THE PRINCIPAL POINTS IN FORMER PAPERS.

Those who study this notation and the principles to be observed in teaching it, will find it natural, simple, true and complete for all kinds of vocal music.

Be careful always to teach the thing to be taught, and only after this is mastered, give the sign.

Try to secure correct position whether the pupils are standing or sitting, and cultivate correct breathing and purity of tone. The mouth should be well open, and the vocalized stream of air should strike at the root of the upper teeth, not farther back in the mouth, which would produce a nasal sound. Let the teacher go round and ascertain whether each pupil sings in tune; if not try to bring him to do so. Do not allow him to sing with the class, but carefully listen until he can sing in tune. Justice to the class requires this; and thus the pupil will learn most quickly to sing correctly. The teacher should never sing with the class, except when he is singing a different part. Let him only sing when the pupils are silently listening to his pattern.

The first step consists in teaching the Doh chord. Do not ask the children to sing any of these three notes until they have learned to recognize first the d, next the s, then the d and s, and describe their characters. And now the pupils may sing the two tones after the teacher has patterned them softly. Get these sung in any order to the tone names and to the syllable lah, from the manual signs, or pointing on the modulator, and next from the signs or notes written on the black board. Remember to change the pitch of d frequently. Next get the pupils to discover the new note me, to describe it, to recognize it. And only then ask the class to sing it from the teacher's pattern, and at first only descending from s. After the pupils sing it with freedom they may sing m, passing from d to s. Always when the pupils sing a note correctly remind them of the character or mental effect. Ask them to think the note and then sing it.

In each lesson give some ear exercises.

The second step consists of the three notes of the Soh chord. As in the former step, get the pupils to discover these, then to recognize and describe them, and afterwards to sing them from the pattern. Introduce the new notes at first only in chord exercises or passing notes. In all exercises with manual signs or on the modulator give variety in phrases as well as time; use musical phrases, and avoid getting into grooves along which the pupils can go even ahead of the signs or pointing. Work up any new or difficult phrases.

The third step consists of the notes of the Fah chord. Teach these notes in the same way as the notes in the first and second steps.

The teacher should not ask the pupils to go up or down the scale until after this third step has been taught. Time: Always get the pupils to observe the time in the teacher's singing and next to describe it. Then the third step is to sing from his pattern whether he is teaching single pulse notes, two pulse notes, three pulse notes, or half pulse notes, or three-quarter and quarter pulse notes. Make all the use possible of the accents strong, weak and medium in teaching pupils time. Only after the pupil can sing any particular rhythm give the notation, and only one new sign at a time. Never introduce for the first time more than one difficulty. In each case where there is a difficulty in an exercise (and there should be no *new* element in the exercise to be taught) teach not more than one measure at a time, and to one syllabe, so that the additional difficulty of tune is not introduced. Often it will be necessary to teach the exercise in half a measure, or even each pulse separately. Thus break up the difficulties into as small pieces as possible. It will often help the pupils to teach a more open form of rhythm, and when that is mastered in slow time, quicken the time up to required rate. Next take the time somewhat slower, but breaking as indicated in the exercise, and last work up to the time. This should be mastered apart from the tune, using only one syllable. Thus | d . , d : may be treated first in the form | d : — | — : d, next | d : —. d , and last | d ., d :

The time should be taught in the first three steps from the modulator or hand signs, and always any new or difficult interval in the same way.

Sing any passage not more quickly than can be done with ease.

In vocalizing or singing to the open syllable lah (which should always be done before singing to words) try to get the pupils to sing looking to the notes and thinking them. They are very apt to sing entirely from the memory of the tune, and so by ear, not from the notes.

Sing the words after the pupils are familiar with them from being carefully read over and explained. Let the teacher remember that there are many difficulties involved in singing words to a tune. These are only some of them. The pupils require to look at the notes, think the tone, look at the time, measure it in their mind, sing the tone in tune and time, and without the aid of the tone name; to think of the word or syllable and fit this to the right tone, and give it the due time.

Require the pupils to sing even the simplest songs with expression. But note that the mechanical part of expression should be taught in connection with some simple exercise that has been thoroughly mastered, such as the scale, or easy elementary rhythm. Let the teacher be satisfied with what most will consider slow progress. Master each new point before introducing another. JAMES ANDERSON.

For the Review

## Kindergarten Methods in Primary Schools.

FIFTH PAPER.

Any one who has watched children at play must have observed the destructive tendency which seems natural to them. Girls break up their dolls "to see the inside," and boys their drums. When once the toys are broken they are discouraged and baffled because the pieces will not go together again. Froebel, after a careful study of these facts, was forced to the conclusion that the so-called destructiveness of children is simply "perverted constructiveness," and that toys should be made so as to admit of separation into parts and reunion of these parts. Upon this he founded his *third gift*.

The third gift is a cube subdivided by three cuttings into eight equal one-inch cubes, each one representing the large cube on a smaller scale. It is presented to the child as a whole, and in the first lesson I saw given the teacher took a two-inch cube, with which the children were familiar, and tried to break it by pulling it apart. Of course it would not break. Then she gave them each one and they tried, but the hard wooden cube would not yield to the little fingers. She then told them to watch and see if she could break this one (touching a third gift which she had taken so carefully out of its box, in which it comes to the Kindergarten, that the cuttings were almost invisible at a little distance) and to their delight she separated it without any trouble. Then each of the little folk was given a box and directed carefully how to remove the box containing the cube so that the gift would stand as a whole. At once the idea of *the whole and its parts* was conceived by the child, and each at once noticed that he could build

with this toy. It was seen that the little cubes were exactly like the large one, except in point of size, and the large cube was measured first and then the parts. Attention was drawn to the cracks in the large cube, and the way they went, up, down, back, front, etc. The words *above*, *below*, *behind*, *right*, *left*, etc., were used in describing the position of the little cubes, and then they made a chair as it was dictated to them.

"Take the right-hand front block with your right hand and place it on top of the right-hand back block. Take the left-hand front block with the left hand and place it on top of the left-hand back block." This made a chair, and then a conversation was held about what chairs were made of and for what they were used. Some went to the board and tried to make a picture of their chair, but found it hard to do. They were allowed to make anything they wished at the close of the lesson for a few minutes, and then the cubes were arranged in the form of a large cube again. Each placed his third gift as a whole into its own box.

There are three kinds of forms made with this third gift, *forms of life* (representations of objects which exist); *forms of knowledge*, affording instruction in number, form, and proportion; and *forms of beauty* (perfect models of symmetry and order)

No matter what *form of life* is built we have a chance of developing ideas and of a language lesson. If we build an engine or a stove we might have an instructive lesson on iron; if a well, about water and its uses; if a church, why people go there, etc. There are forty forms given in "Paradise of Childhood," and children will often give a name to a form which is quite original.

By *forms of knowledge* or mathematical forms we teach addition, subtraction, and (with older pupils) multiplication and division. Let me say here that the teacher of Grade I who once uses this third gift in her number lessons will wonder how she ever did the work before without it.

Since the cube is given as a whole the principles of proportion are easily taken in by the child. The teacher, lifting the upper half of the cube, asks, "Did I take the whole cube in my hand, or did I leave some on the desk?

ANS.—You left some on the desk."

"Have I as much in my hand as there is on the desk?"

A.—"You have just the same."

She then tells them that things just the same, or alike, are called *equal*, and when the cube is divided into two equal parts each part is called *one-half*.

The teacher asks, "Where are the two halves of my cube?"

A.—One is in your hand and the other on the table.

All see that they have two half cubes, or one whole one when the two parts are put together.

The lessons proceed slowly, and many exercises are given before the words quarters and eighths are gained.

The *forms of beauty* are symmetrical forms arranged around a centre and represent no real object. Their regularity makes them pleasing to the eye. Having a third gift before us we take away the right back block and place it at the back on the desk touching at middle, the left front one and place it in front, the right hand front at the right side, and the left front at the left side. This gives us a form with four cubes as a centre.

There are a great many forms of beauty.

This gift cultivates the powers of observation, makes skilful hands, and increases the inventive power. A great deal is made of invention, as here the child must be thoughtful and attentive.

"The child's special talent or ability must manifest itself in this training. Children enjoy only what they can utilize for their own needs, and this divided cube, with all its possibilities of imagination and instruction, places in the child's hands an elastic plaything that will yield to many of its fancies. D.

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For the REVIEW.]

## Kindergarten Work in Hillsburgh, N. S.

Early in June last, chiefly through the liberality of a few leading citizens, a Kindergarten school was opened in this town in a new and commodious room under the efficient care of Miss Bertha Rice, who, to a natural aptitude for such work, has added the qualification which results from careful training at Truro.

A number of parents availed themselves of the opportunity thus afforded of having their little ones trained in a system of instruction which is now generally allowed by educationists to be of great benefit both morally and intellectually, but the advantages of which have hitherto been almost wholly confined to large cities. The number of children entered at this school was not large, for parents who do not understand its method and purpose are often slow to approve and make use of it, not recognizing the fact that it is a valuable aid to the discipline and training of home, and is an efficient help to the subsequent instruction of the primary schools. However, some fifteen pupils enjoyed the advantages of this school.

The work done was the ordinary Kindergarten work, which seems like a compromise between play and study, and so dexterously were the children led

along from day to day that they were studying without knowing it, learning many things of importance, forming habits of observation and inquiry, and having the eye and hand trained by a method which seemed to them amusement, but which was really a careful discipline. On the evening of December 22, 1890, a review of the work done during the past seven months was held, and a large number gathered, drawn by interest or curiosity, and it was soon evident that curiosity gave place to satisfaction, and that interest deepened into approval. The exercises of the evening would not, perhaps, to an unpractised eye reveal the full significance of the teacher's labors, but they certainly created an impression very favorable to Kindergarten work in general. The children performed their parts with an ease and self-possession which, if they had acquired nothing else, would speak in praise of the system. The specimens of work done during the term showed great neatness, and though the exercises of the evening were not in the nature of an examination yet enough could be plainly seen to make it evident that the past seven months had been well spent.

At the close of the exercises addresses were made by H. H. Chute, Esq., M. P. P., and by Messrs. Willard Clarke and Alpheus Marshall, in which they expressed in clear and forcible terms approval of the work already done, and a hope that it would be continued, and that the time was not far distant when the Kindergarten would be incorporated in the system of public instruction.

Since holidays the school has resumed work as a Kindergarten primary. REV. W. C. BROWN.

## Physical Geography in the Public Schools.

BY EDWARD MANNING, M. A.

It is strange that with all our progress in school methods, the teaching of geography is still complained of, and its results unsatisfactory. On the continent of Europe, indeed, they manage these things better. The study ranks equal to the classics in the German realschulen and the French academies. Among reasons for the complaint are, the common faults of inferior teaching — to be referred to later — the dryness of many text-books, the want of sequence in the subjects, and the omission to connect geography with physics and history.

In fact the study of geography will always be dry, unless physical geography is the basis of its treatment. But if this be rightly done, all is changed. It is recognized as related to all the natural sciences. As Geikie says: "It ever looks for a connection between scattered facts, tries to ascertain the relations which subsist between the different parts of the globe, their reactions on each other, and the function of each in the general economy of the whole." It "studies the distribution of vegetable and animal life over the earth's surface, with the action and reaction between it and the surrounding world. It traces how man, alike unconsciously and knowingly, has changed the face of nature, and how on the other hand, the conditions of his geographical environments have moulded his own progress. With these broad aims, geography comes frankly for assistance to many different branches of science. It does not, however, claim in any measure to occupy their domain. It brings to the consideration of their problems a central human interest, in which these sciences are sometimes apt to be deficient; for it demands first of all to know how the problems to be solved bear upon the position and history of man, and of this marvellously ordered world, wherein he finds himself undisputed lord. It borrows freely from all the natural sciences; but the debt is not all on one side. Save for the impetus derived from geographical research, many of these sciences would not be in their present advanced condition. They gain in vast augmentations of facts, and may cheerfully lend their aid in correlating these for geographical requirements."

With geology the connection is so intimate that the narrow view of its definition which will be chiefly adopted in this paper, reckons it a department of this science. As for chemistry — the earth is the great storehouse and laboratory of its elements and compounds, and the great theatre of its forces. Mathematical geography — a division of physical, is for all of us the chief and for many of us the only chapter of astronomy. Then again the ocean, air, clouds, form the studies of the meteorologist; as the plants, animals, and human races are of the botanist, zoologist, ethnologist, and biologist.

And the science is not only the bond of union of the natural sciences, but the bond of union between these and the human, mental, and historical sciences, as well as the basis of the latter class. As old Hakluyt has said: "Geography and chronology are the sun and moon, the right and left eye of history." Think how naturally the sterility and central position of Arabia's deserts, ere the sea had become a highway instead of a barrier, led her swarthy sons to the caravan trade; how the want of *land* marks led to the search for *sky* marks, and thus to infant astronomy, just as the floods of the Nile, obliterating landmarks, originated geometry, that is, land surveying; how the narrow Mediterranean, with far reaching promontories and island stepping stones, proved the nurse of infant trade; how trade's timorous groping from cape to cape led to the coasting of Gallic, Britannic and Baltic waters, till it spread its white wings for further flight, and finally lighted on the New World. Think again, how, when Asia Minor and the friendly Cyclades had pointed the way to Greece and Italy, the tender germ of Aryan progress there was sheltered by Balkan and Alp from northern blasts and northern marauders lest it should be untimely blighted in the bud. And when too genial climes had enervated the races thus favored, and the rough races of the forests beyond at last broke through; how, as Hughes says: "From the contact of the north with the south — the latter represented by a people who had grown up amid the most advantageous circumstances of nature under a bright and glowing sky, and in a genial climate — the former by tribes who had attained their maturity under the more bracing influences of a colder temperature and a less attractive aspect of nature — sprang the mingled strength which exhibited itself in such various forms of intelligence and activity, and which, through the storms and darkness of the early portion of the middle ages, prepared the way for the triumphs of genius effected at a later time. The result of these combined influences is exhibited in

the artists and architects, the poets and philosophers of mediæval Italy, and in the commercial enterprises of Venice, Genoa, and Pisa, and others which clustered around her shores." In this connection, it has always seemed the irony of fate that the land which gave birth to Columbus, Vespucci, Verazzani, and Cabot should never have owned a foot of that New World to which they led the way.

But if physical geography is so important, how is it that it no longer enjoys the prominence it formerly had in school curricula? The reason is, perhaps, that the subjects grouped round it are now more minutely differentiated.

As to methods in teaching it. Instead of a vain attempt to lay down any complete system, would it not be more serviceable to indicate a few salient points of what to avoid and what to aim at? Under the first head is to be classed the *attempt to do too much.* One school geography in my possession contains 660 pages. Think of attempting to learn that amount in one of about eighteen departments of school study. This is becoming a serious question. The papers contain this week the appalling statement that about 300 students in the Prussian schools have committed suicide within the last five years, and the cause is largely traced to overpressure. The thing is simply monstrous. Rather than this one would fain go back to the careless time,

"When first in woods the noble savage ran."

The thought is too positively painful to dwell on.

The next fault to avoid is that of *second hand;* giving judgments on the authority of others' statements, without the enquiry that makes them valid and valuable.

Third, the *slavery of the book*, instead of, at least, supplementing it with those references to nature all around us, which are so easy, so obvious, and yet so rare.

Fourth, the *premature presentation* of what cannot yet be assimilated by the scholar's unripe mind.

And last, but not least, the everlasting telling instead of teaching, the *didactic disease* of the pristine race of schoolmasters rather than teachers.

Now, having marked out the rocks and shoals in the course, the channel between is our proper way. This channel is indicated in our normal school instructions on method, which again are applied in our prescribed syllabus; so, instead of recapitulating them here, it will be better to glance at a few guiding principles.

Every effort is required to strengthen the *weak point* in the study of geography, namely, its want of sequence. For this purpose the aid of association and contrast, that of the connection of causes and effects, of experiment where possible, and especially of generalization, is to be earnestly sought. But be careful not to generalize too boldly, as is done occasionally even in text books. Thus Milner makes the broad statement that the heaths are actually confined to the Old World and the cacti to the New. Whereas we know that though heaths are rare and unimportant in this hemisphere, and an English visitor to Boston at once remarked on their absence in the neighborhood, yet they are by no means unrepresented here; while as to the cacti the Encyclopedia Britannica only ventures to say that they are almost entirely if not exclusively native to the Western World. Forearmed with this caution, however, the teacher will do well to generalize and thus group his facts. Take a few well-known generalizations with regard to the earth's reliefs and contours, and see how much they involve.

1. The eastern continent is consolidated and most massive in the north temperate zone, while the western continent stretches north and south through four zones. 2. Both narrow down southwardly to a rocky point, with islands or shoals as appendages, having a large island or group of islands to the east. Their chief peninsulas follow the same plan. 3. A remarkable parallelism exists on both sides of the Atlantic, the projections of one side answering to the indentations of the other. 4. The great land masses are grouped in three double continents, united by an isthmus or an island chain, with an archipelago on the east and a great peninsula on the west. Thus the Americas form one, joined by the Darien isthmus, with Old California on the west and the West Indies on the east. Europe and Africa, a second pair, having Italy and Sicily for their connecting link, prolonged as this is by the shoals which divide the *Mare Internum* into its two basins, (on which shallows, as you remember, Æneas came to grief,) having the Iberian peninsula on the west and the Grecian archipelago on the east; lastly Asia and Australia form a third, with the Malay peninsula and Sunda Islands for a link, having Hindostan on the west and the Malay archipelago on the east. 5. The three northern continents are deeply indented by the sea, while the southern are iron bound. Hence in ease of communication and all that it implies, the north is the favored hemisphere; and hence, this has been, is, and will ever be the chief scene of the great human drama, though the twentieth century — soon to dawn — will see the children of the south act a far more important part than hitherto. 6. Remarkable differences exist with regard to the Old and New Worlds. In both, as in all the great land masses, we find two unequal slopes culminating in a ridge, always nearer one coast. In the Old World the long slopes are towards the northwest, in the New towards the east, thus having their long gentle slope to the Atlantic and Arctic, and the short, steep one towards the Pacific and Indian Oceans. . . . "In this point of view," Guyot says, "these two great oceans appear as two basins of different geological character. The Pacific seems an immense basin which has sunk down, and whose high and ragged edges present on all sides the abrupt termination of the continents. It is on this line of fractures on the borders and all around this ocean that we behold the great majority of the active volcanoes of our globe arranged like an immense burning crown. The Atlantic, on the contrary, seems a simple depression in the form of a trough, owing perhaps to a lateral pressure, and partly to the tilting motion which lifted up the lands in the neighborhood of the Pacific. Hence its narrow breadth, the valley form, the absence of numerous islands in the interior of the basin, and the descent of all the neighboring continents by gentle slopes." 7. In the distribution of mountains, plateaus and plains there is a remarkable difference between these two great continents. In the old world the highlands predominate, but in the new the lowlands; and whereas the lowlands of the old world are of less service to man from aridity or cold, those of the new are the best portions of its surface 8. With regard to the oceans, the Pacific is marked by land-locked seas, the Indian by open seas, and the Atlantic by inland seas. 9. With regard to the winds, the rule is given by the oceans, while the local circumstances of the continents cause the exceptions.

Dana's generalizations as to the continental reliefs may be given here. 1. The continents have generally elevated borders with a basin-like interior – the highlands being more massive on one side. 2. The higher border faces the larger neighboring ocean. 3. He also compares the ratio between the size of the Alleghanies and that of the North Atlantic to

that between the size of the Rocky Mountains and that of the Pacific; and again the ratio of the Rocky Mountain region to that of the North Pacific with the ratio of the size of the Andes to that of the South Pacific. 4. He sees in the case of the Altai and Himalaya a similar relation to that between the Andean system and the secondary American highlands. He might have instituted a third instance in the highland masses of northern and southern Europe; a fourth in those of east and west Africa; and a fifth in those of east and west Australia.

He also gives the following observations about the contours of the continents: 1. That the prevalent trends of coast lines both in continents and in island groups are towards N. W. by W. and N. E. by N., meeting at right angles. 2. That where deviations occur they are mostly in curves. 3. The longest lines of coast lie on or near the wooden horizon of a globe when its poles are alternately elevated 23° 30'; or in other words that they form great circles, tangential to the Arctic circles.

Now, if any think these generalizations vague, if not puerile, let them thoughtfully follow out the probable effects of any great alterations in some of them. Think, for instance, what would result if the wide Pacific were placed where the narrow Atlantic now lies, or if the two coasts of this continent changed places, and America turned her back on Europe literally, as some of her more foolish children propose to do commercially, and heaved her Andes right athwart the way of infant colonization — or if the long cordon of narrow seas which happily separate the triple series of northern and southern land masses were removed to the northern coasts, giving a far vaster Sahara in the east, and perhaps one in the west to match it; how mightily would man's fate be changed!

This principle of comparison and association may be carried out in numberless other directions and link facts at first sight unconnected. Thus our gulf stream has its analogue in the *Kuro Siwo* or "Black Stream" of the Pacific, the Japan current. The equatorial current of the Pacific is deflected in a similar manner to the north-east, there, as here, it meets like ours an Arctic current flowing from Behring's Straits, which causes fogs in that sea like those on the "Bank," and give the same wealth of fish; for it seems also to be a general rule that the fish of cold waters are the most prized for purposes of food.

Wherever possible a fact ought to be coupled with every geographical name, and facts may be associated in other connections than that of cause and effect, on the principle of association. For instance: Our Province has one river of more than 400 miles in length, twice that number of half the length, viz., the Miramichi and Restigouche, and twice that number (4) of half that length again, viz., the Nepisiguit, Petitcodiac, Magaguadavic, and St Croix, each being about 100 miles. This makes seven independent rivers of 100 miles or more, to which may be added as many tributaries of our greatest, river also of about 100 miles each, viz., the Aroostook and Oromocto on the right, and the Tobique, Nashwaak, Salmon river (with Grand Lake and the Jemseg), Washademoak, and Kennebecasis on the left. So with our counties. There are seven on the coast and the same number up the river, besides our own county, which belongs to each class. And every county has some characteristics of its own. Northumberland is the largest, our own the smallest, Victoria is the most hilly, and Kent the most level, Charlotte and Gloucester, at opposite angles, contain the important islands, Sunbury is the oldest, and once included the whole Province, and Madawaska is the youngest, Albert is the richest in minerals, and Westmorland in marsh, York has the capital, and so on.

Again, a fact may be presented in a dull or in an interesting way. A New Brunswicker engaged in setting up telegraph wires in S. E. Siberia, then recently acquired by Russia from China, described the climate to me as what is called extreme in these words: "The tiger and sable, the vine and the pine meet on the Usuri River." This is what is called the "art of putting things."

A few words about our manner of dealing with geographical names. It is to be feared that in the common sense reaction against the old etymological fribbling, the pendulum has swung too far. Much useful and interesting information clusters round proper names. How many traces of the old Celts in Europe live in the four river names, Don, Dour Avon, Uisge; the 14 Avons of Britain, the Adour, Derwent, Trent, Douro, Dordogne; the Usks, Axes, Esks, Exes, Ouses, Oxus, Oise, Iser "rolling rapidly;" the Dons, Tyne, Teign, Donau or Danube, and so on through a host of instances. We have in Acadia too our three Tracadies, each on the north shore, and the loyalists in each Province laid out their Kings and Queens counties, coupling them in the Island with the names of the reigning Sovereigns — just as the Catholics in Ireland laid out theirs, with their shire towns of Philipstown and Maryborough. Still more useful is it to mark the meanings of the names in physical geography, which are generally descriptive. There is a good list in the Globe Dictionary, which is classified and enlarged in my speller to a list of about 450, which might be useful.

Another great point to observe is the proper understanding of maps and map projections. The full understanding of mathematical geography is perhaps only to be gained in college work, but the foundations should be laid in school. The theory of the globular projection may be explained, but that of Mercator's Projection is still more necessary, why it appears distorted, and the great use it serves to mariners. Everything about a map should be made clear, even to such points as the *hachures* and *contour* lines; why, for instance, the north slope of the Cantabrians is darker than the southern, the northern *hachures* being darker because the slope is steeper. It is a sign of progress that we are attempting relief maps in a rude way. A very simple and effective expedient is to form the model of a continent or that of a locality on a horizontal black-board in dry earth or moulding sand. Asia makes a most interesting one, with its three huge plateaus and their mountain buttresses; those of the centre and southwest showing their three platforms, with the dividing ranges, and the Deccan with three also. The work takes some time it is true, but it would more than repay the trouble, and could be allowed to stand some weeks.

We could learn much from the way in which the press deals with the subject. Now and then a bright, breezy article makes us rub our eyes, as we see how fascinating the topic can become. Now it is a project to dam Lake Athabasca and throw its drainage with that of the Saskatchewan south into the Mississippi, now to shut up the Straits of Belleisle, now to flood the Sahara, and so trade with the Tuaricks and Tiboos of inland Africa. Lately the *Pall Mall Gazette* thus reflected on the last meeting of the *savans* of the geographical society. . . . . .

"Suppose some philanthrophic Gulliver, hailing from the larger air of Saturn, to be contemplating this Liliputian world from an arm-chair slung at a convenient distance out in space. As it spun round before him, like

a papier-mache globe in a schoolroom, presenting to critical inspection each region in turn of its variegated surface, what would our philosophic Gulliver see? He would see (with the assistance of a powerful lens) a "luke-warm bullet" revolving with some minute signs of animation upon it. Regarding its area critically, as a microscopic landed estate, he would distingush about it something decidedly patchy. He would observe that while some small portions of it were laid out with excessive care as parks and gardens, there was a vast deal of this valuable property of which Providence has made over the entail to mankind, which we thriftless lords of the manor have let run to waste. Tropics choked with weeds, Saharas left dry and naked, with no provision to catch the fitful drenches of rain and turn them to account — the philosopher would shake his head to mark such signs of thriftlessness in the landlord of so scanty a domain — and one withal so water-logged. He would smile, too, a Saturnian smile, at the whimsical inequality with which a large and increasing family had treated the various portions of the land in settling down upon it. Here would be a scrap of dirt, standing up in a ditch a paltry thousand acres big, downright black and humming with Liliputians; such alarms, excursions, and agonies in acting; such plentiful buzzing to each other of progress and civilization and the like, such profound deliberations upon the destiny of the rest of Liliput and masterful ordering of the rest of Liliput to conform thereto! And right in the midst of one of such inconsiderable scrap, the British Association sitting to discourse of the future of humanity."

Surely the force of flippancy "could no further go!" A lukewarm bullet! Shade of Copernicus, what next?

Lastly, fellow teachers, our highest aim should be to rear on our instructions the fair superstructure of duty and of faith. There are those who claim that science will soon slay our beliefs. If this be so, I am glad for my part, that my sands are beginning to run low in the glass, so that I shall not need to grow too wise to die in the faith of my fathers. But no such fate is to be feared for our future. Attacks on faith are as old as the faith itself. Toland, and Chubb, and Hobbes had been swinging their bold maces of invective at revelation for half a century, and Bolingbroke and Shaftesbury had been stabbing it with their more dangerous logical rapiers, when the gentle Addison thrilled the nation's heart in the *Spectator* with the noble lines:

"Th' unwearied sun from day to day
Doth his Creator's power display,
And publisheth to every land
The work of an Almighty hand."

And again:

"Soon as the ev'ning shades prevail
The moon takes up the wondrous tale
And nightly to the list'ning earth
Repeats the story of her birth."

And an attentive ear can still, despite all the blatant discord of denial, hear our Mother Earth's great part also in this dominant fugue of the harmony of the spheres — the *Jubilate Deo*, the angels' song. Happy the ears that hear it? "For," our blind bard wrote of it,

"For, if such holy song
Enwrap our fancy long,
Time will run back and fetch the age of gold.
* * * * *
Yea, Truth and Justice then
Will down return to men.
* * * * *
And Heaven as at some festival,
Will open wide the gates of her high palace hall."

Nay, even the minor modulations are worth one's life to hear. She sings of herself also, of the subtle forces that run through her giant veins — electric, magnetic, chymic, centripetal; of the light and heat with which she is impregnated by her great solar consort, of her convulsive throbs when the earthquake fit rends her, of her gracious care of her offspring, the faithful register she silently keeps of them laid away in her bosom, and of the gentle love with which she lulls them to sleep in her arms at last!

Let us, then, if we would be true to our trust, and not offer a stone to the young hearts that look to us for bread, ever bring back our lessons to this primal truth, that though nature claims our admiration, our study and our reverence, yet the source and soul, the end and aim of all is GOD!

## County Academy Entrance Examination.

### GEOGRAPHY.

1. Explain the terms *bay*, *sea*, *river*, *tributary*, *channel*, *isthmus*, *volcano*, *latitude*, *longitude*.

2 Give the boundaries of New Brunswick, and give, as fully as you can, the *southern* boundary of the Dominion of Canada

3 In what direction from the nearest land are the following Islands, and by what waters are they surrounded: Newfoundland, Sable, P. E I Island, Miscou, Bermuda, Tierra del Fuego, Man, Sicily, Orkney, St. Helena, Tasmania, Ceylon, Madagascar, Vancouver.

4 From what countries do we chiefly obtain the following: Cotton, sugar, rice, silk, copper, tin, gold, grapes, tea, silver? and what are the principal productions of the West Indies?

5. Give a short description of the surface, climate and products of Europe

6. Write a note on any one of the following: Ireland, Australia, Brazil, Newfoundland, Egypt.

7 Give as definitely as you can the position of the following cities: St. John, St. John's, Ottawa, Hamilton, Chicago, St. Louis, New Orleans, Glasgow, Belfast, Bristol, Copenhagen, Odessa, Melbourne, Calcutta, Cape Town, Rio Janeiro.

8. Name and locate the political divisions of Asia, with their capitals

9. Draw an outline map of North America.

### USEFUL KNOWLEDGE.

(*Ten questions will be considered a perfect paper.*)

1. Why is a room full of people warmer than the same room when empty?

2. What is ventilation? Name some of the causes of impure air in a household?

3. What is meant by the "circulation of the blood?"

4. How is snow formed? Describe some of the forms found in snow-flakes? What is hail?

5. What is the "crust of the earth?" Define *fossil*, *clay*, *sand*, *shale*, *gravel*, *sandstone*.

6 What is the chief difference between an organic and an inorganic body?

7. What winds are usually accompanied by rain in this country? and what ones bring fine weather? Give reasons for your answer

8 State what you know about coral, pearls, ivory, sponge, coffee, petroleum, tapioca, chocolate

9 Why does a bucket of water appear lighter while it is still in the water than when out of it?

10 Distinguish between a *simple* and a *compound* body. Which of the following are simple and which compound: *Iron*, *sugar*, *tin*, *sulphur*, *water*, *gold*, *carbon*, *air*?

11. Explain why a candle will burn in a wide-mouthed jar, but not in a bottle with a narrow neck.

12. Distinguish between *vertebrate* and *invertebrate* animals. Name the different classes of the former with typical examples of each class.

13 Name the parts of a plant commonly called the "Organs of Vegetation," and describe the duties of each

14. Mention some of the uses of trees and plants. Which are most useful for food? for clothing? for building houses or ships? for furniture?

15. Give a short sketch of the life history of any one of the following: The butterfly, frog, grasshopper, bee.

16. State as fully as you can the effects of the use of alcohol upon the human system.

BRITISH AND CANADIAN HISTORY.

1. Name the Sovereigns of the House of Stuart, with the dates of their accession; mention one or more important events in the reign of each.

2. Tell what you know of the following personages: Simon de Montford, Perkin Warbeck, Titus Oates, Lord Clive, The Black Prince.

3 Briefly describe any one of the following: The Indian Mutiny; Trial of Warren Hastings; Gunpowder Plot; South Sea Bubble.

4 Mention the chief events in the reign of (1) William I ; (2) Henry III. ; (3) Henry VIII ; (4) George III.

5 Write a note on the settlement of Halifax.

6 Give dates for the following events: Establishment of Responsible Government in Nova Scotia; Massacre of LaChine; Founding of Quebec; Dominion of Canada formed; Capture of Beausejour; P. E. Island separated from Nova Scotia; D'Anville's Expedition; Battle of Lundy's Lane; Founding of Montreal; Incorporation of Halifax; Province of Manitoba organized.

7. State what you know regarding the history of Port Royal.

## Shakesperian.

The study of the works of Shakespeare forms one of the interesting pursuits of Principal A. Cameron's pupils in English literature at the Yarmouth Seminary. Some years since Mr. Cameron communicated to *Shakesperiana*, a monthly magazine published in Philadelphia, the substance of a discussion conducted among the members of his class, chiefly young ladies, concerning the interpretation of a line in the "Merchant of Venice," which runs as follows:

"And yet a maiden hath no tongue but thought."

On inquiring of the editor of *Shakesperiana* as to whether there were any generally accepted interpretation of the line, the views of several members of Mr. Cameron's class were presented. The first interpretation offered was that the speaker (Portia) felt herself restrained from declaring her affection through modesty and social conventionality. A second suggestion was that the meaning might be that "a maiden speaks just what she thinks — tells the plain unvarnished truth." The third interpretation suggested was that Portia thinks thoughts which she would like her lover to know, but is unable to clothe them in speech — as expressed by Tennyson:

"Oh that my tongue could utter,
The thoughts that arise in me."

These diverse views were illustrated with a considerable wealth of apt quotation from famous poets and writers.

Mr. Cameron was naturally and justifiably gratified to find that Dr. Horace Howard Furness, in his great work "The Variorum Shakespeare," in the noble volume devoted to a study of "Merchant of Venice," had fully reproduced the discussion of his Yarmouth Seminary class of 1885. Dr. Furness is known as the most distinguished living Shakespearian student and his edition of Shakespeare as a masterpiece of scholarship and criticism. Dr. Furness closes his observations on this line as follows: "In the interesting discussion in *Shakesperiana*, I should be inclined to think that the first interpretation offered is the true one."—*Yarmouth Paper.*

## Manual Training.

At the risk of being accused of having an educational hobby, I will, for the third or fourth time, point out that our city boys are losing ground in the struggle of life on account of defective manual training.

Country boys have the advantage of a double training. In common with city boys they undergo the more or less artificial discipline of the school. But they also have that more natural training in which the hand and the head work together. Their inventive and executive powers are called into exercise in building fences, removing stones, constructing sheds and a hundred other things quite as mind-developing as parsing and the learning of historical dates. In their leisure hours they are studying natural history from the live specimens while scouring the meadows and woods in search of amusement.

What the country boy enjoys in the way of training hand and eye to be the true servants of the mind; what he enjoys in the way of opportunities and incentives for making the mind itself the real master of life through a well-round and harmonious development of all the powers, through the creation of the spirit of self-reliance, through the exercise given to the constructive and and executive faculty is almost infinitely greater than that which falls to the lot of the unhappy city boy of to-day. Out of school what has the latter to do with himself, his time, or the energy given him, as we are wont to say for some

good purpose, though it would puzzle the most devout and the most ingenious to tell for what purpose energy should have been given to a boy condemned to live in a modern city."

In the system of education which you are now supporting, what do you accomplish beyond storing the mind with a mass of information—not always the most useful in the struggle for existence, while the powers of doing are left untrained. We omit almost wholly from our schoolroom curriculum — manual training — one of the most effective mind and body developers.

If you establish in some central locality one department devoted to manual work you will do much to improve our whole school system.

In the first place all boys over fourteen years of age who have come up to a certain standard in their other studies, could receive lessons at stated intervals, devoting to such work from two to four hours per week.

2. The teachers of the other schools might, as they do in other cities, take a course in manual training, and thus be fitted for conducting, to a suitable extent, hand work in their own departments.—*Report Supervisor McKay, 1890.*

## School Attendance.

His audience must have been particularly glad that Mr. Blair, in his address here a few weeks ago, made the reference he did to the schools, intimating his intention of seeking some remedy for the existing evil. We have a good school law; a very large amount of money is annually expended upon it; property is pretty heavily taxed for the support of the schools, but this tax is cheerfully contributed; the expenditure is large enough to provide, as it does provide, to give every child in the country a common school education, and, notwithstanding these facts, the sad truth is that only about 60 per cent. of the children of school age in this Province are on the school registers, and only a little over half of those enrolled give average attendance at schools. We always presented the fact, just stated, as being one that demanded a reform, and have hailed with satisfaction every effort made by the education department and others to awaken public opinion to the enormity of thing. It is, let us be thankful, not a matter that can very well be made to do duty as a party hack. We sincerely hope the attorney-general will at once grapple the wrong and provide the relief, satisfied that all right thinking men and women, all who respect the necessity for primary education being freely provided for all the children of the state and who must as a consequence regard it as important that the children for whom this provision is made should, from choice or compulsion, take advantage of it, will approve of any measure, having the desired result in view, that the government may propose.—*Carleton Sentinel, Jan. 31st.*

## Window-pane Pictures.

From eve till dawn, the long night through,
  Cold winter's elfin band
    Such pictures drew
    As never grew
  Beneath the touch of human hand.
In dawn's dim light they faintly gleamed
On frozen panes, and glimpses seemed
  To give of fairy-land.

The boughs of great old trees were bent
With silver sheen; and forth was sent
  A frosty light from distant height,
  Where glitt'ring spires appeared to sight,
    And far-off castle wall.

Now here at hand, like a silver strand,
  Hanging in mid-air fairily,
A drawbridge spanned the chasm grand,
  Gleaming before us airily.

A stream flowed down the mountain's side,
  And cast a silvery spray,
Then dashing on with leap and slide,
With graceful bound and easy glide
  It reached the boulders gray,
  And in deep gorges swept away.

Now o'er the cold, gray landscape came
  A wavering light, a pale rose tinge
  That touched the leaves and mosses' fringe,
Then slowly grew to ruby flame
  Setting the distant peak aglow,
  Melting from frozen heights their snow.

So fairy-land now fades away,
  And we may watch in vain.
Our frostmade pictures melt from sight—
  The drops roll down the pane.

—*Mabel Nichols, in February St. Nicholas.*

The Swiss universities are broad and liberal in the highest degree. Statutes are passed in their senates with simple reference to elevation of character and with no apparent thought of the sexes as separate. These statutes, when presented in council, are treated in the same spirit, and the question as to the advisability of co-education came first in every university after women who had already entered and studied. The original statutes excluded no one, and consequently when — after a remarkbly long time — women applied for admission, their names were taken exactly as those of their brothers were taken; they took their places among these and worked there undisturbed until some other consideration brought the question forward. — FLORA BRIDGES, *in Popular Science Monthly for February.*

## School and College.

At a lecture on electricity before a large audience in Orpheus Hall, Halifax, by the Science Master of the County Academy, two students, Masters Douglas Mackintosh, and Stanley DeWitt, assistants, conducted the larger number of experiments without a single failure. Much of the apparatus was made by the academy boys, including a special form of galvanoscope, electro-magnetic devices, an electric motor by Master Burton and an induction coil by Master Eagar.

Says Supervisor McKay in his report: Sister Bernard, who had charge of St. Patrick's Girls' High School, Halifax, since it was first organized, has retired from the principalship on account of ill-health. The school owes to her wise management its present high standing. Sister DeChantal, who succeeds, will prove equally successful.

The free scholarships offered for competition by the Victoria School of Art and Design, Halifax, were this year won by Miss H. Moody, Miss P. Belcher and Miss G. Fairbanks of the academy, and Miss L. Mahoney and Miss K. Mahoney of St. Patrick's Girl High School.

The attendance at the Truro Academy numbers one hundred and forty, of whom one-fourth are from beyond the town.

Principal Campbell, Truro Academy: "A good example is worth hours of lecturing. Punctuality in a teacher is almost sure to create punctuality in the pupils. Honest, diligent work, with a kindly interest in the pupils' success is sure to be rewarded in the end. A time for everything and everything at the proper time is a motto that should always be followed. Some teachers assign work which is not taken up for days, and perhaps not at all; or they prepare a time table for the pupils, and then entirely disregard it themselves. Others assign work for the pupils to prepare, and then come to class unprepared themselves. They require their pupils to do without the aid of a book what they themselves can only do with the book. Such teachers wonder why they don't succeed, while the wonder is how they could succeed."

The students of the New Brunswick University recently held a most delightful conversazione. The attendance was large and the rooms at the college building were crowded with a gay and brilliant throng.

J.W. Barss, Esq., Wolfville, has donated $10,000 to Acadia College to aid in founding a professorship in the arts course of the college. The new professorship has been established. By special vote it has been associated with the chair now occupied by Prof. R. V. Jones, Ph. D., and will henceforth be known as "The J. W. Barss Professorship of Classics." By his last gift Mr. Barss, a former treasurer and a liberal donor, will take foremost rank among the many generous benefactors of the college.

Mt. Allison University, Sackville, is to have a course of seven law lectures delivered during the present term, the purpose of these being to make students acquainted with the ordinary legal forms and procedure of business life. This is another evidence that Mt. Allison is determined to meet the educational requirements of the times.

The St. John *Globe* has the following concerning the Girls' High School:

In the the *Educational Record* of Quebec for the month of November is a statement in considerable detail of the results of the University School Examinations - practically the McGill entrance examinations - based upon the report of the Board of Examiners for 1890. The fact is noted that thirty-four schools sent up two hundred and five candidates, besides twenty-eight who entered for special examination. Of this number one hundred and nineteen obtained the A. A. certificate, eleven the junior certificate and the rest failed. None of the schools which sent up candidates has any better results than the Girls' High School of St. John, from which there were eleven candidates, ten of whom successfully passed the A. A. examination, and one obtained the junior certificate. None failed. The Montreal High School for boys had 28 who passed, one obtained the junior certificate and two failed; from the Girls' High School of the same city twelve obtained the A. A. and two failed. These are the only two schools out of the entire thirty-four whose results approach in point of numbers our St. John school. In looking over the special reports of the examiners a great deal is found of special interest to the St. John school. For example, in regard to the dictation papers, while these are generally commended, the fact is mentioned that "some of the country schools send up careless, slipshod papers," but for "neatness the candidates from the Girls' High School, St. John, and from the Cookshire Model School deserve special mention." In Classics, "the Boys' and the Girls' High School of Montreal, as also those of Quebec and the Girls' High School of St. John, deserve favorable mention for good work done." "In,' says the report, "a subject like Geometry, which deals with formal reasoning, it might be supposed that the attention of the pupils would be devoted to the necessity of precise and accurate statements and neatness of work. In some of the schools this has been done; and in this connection the Girls' High School of St. John, the Cookshire Model School, and the Coaticook Academy deserve 'honorable mention.'" Again, on the English Literature subjects the report says that for "honorable mention" the examiners would point out the Montreal High Schools and the Girls' High School of St. John, the papers from which were neat and well expressed; in fact, a pleasure to read. As a matter of fact, in almost every case in the report in which special mention is made of a school the St. John school is included. This is a statement of facts that must be satisfactory to the teachers, to the pupils, to the parents, and it certainly ought to be gratifying to the taxpayers.

## PERSONAL.

Wm. R. Fraser, Esq., B. A., (Dal.), late classical master in the Pictou Academy, has been awarded a University scholarship in Greek at the Johns Hopkins University.

Inspector Carter has finished his examination in the western part of Charlotte county.

## BOOK REVIEWS.

INSECTA. Guides for science teaching, No. VIII, Boston Society of Natural History, by Alpheus Hyatt and J. M. Arms; cloth, 4½ in. × 6 in., pp. XXIII + 300, $1.00. (Boston, U. S. A., D. C. Heath & Co., 1891). The typographical character of this book is superior. For its price we have no hesitation in saying that it is the best book on entomology for the beginner which we have yet seen—and the best for the teacher who thinks he knows something of the science as well.

FEDERAL GOVERNMENT, Introduction to the study of, Harvard Historical Monographs, No. 2, by Albert Bushnell Hartt, Ph. D., assistant professor of history. Paper, 9 × 6 in., pp. X + 200. (Boston, U. S. A., Ginn & Co., 1891) An admirable volume. We give the titles of its chapters, which in turn are most systematically sectioned and paragraphed. I The Theory of Federal Government. II. Ancient Confederations. III. Mediæval Leagues and National Confederations IV. The Four Great Existing Confederations (U. S. A.: Switzerland, Germany and Canada). V. Latin American Federations. Appendix A, Conspectus of the Federal Constitutions of Canada, Germany, Switzerland and the U. S. A. B, Key to the Conspectus. C, Bibliography of Federal Government.

GOOD NIGHT POETRY [Bedside Poetry]. A parent's assistant in moral discipline. Compiled by Wendell P. Garrison. Cloth, 4½ × 7 in ; pp 143; 70 cents. Boston, U. S. A., Ginn & Co., 1891. Both printer and compiler did their work well.

POVERTY SUPERSEDED A new political economy, a paper on Economic Science, read before the Nova Scotia Institute of Science, Jan. 19, 1891, by A. P. Reid, M. D., etc., Supt. of the Nova Scotia Hospital for Insane. Pamphlet, 16 pp. Government to collect percentage of all earnings to form a relief and superannuation fund, to control and manage manufacture and trade generally; to nationalize savings banks, life assurance, an annuity system; to lessen the present credit system, abolish the law for collecting debts and make economy compulsory.

LA CANNE DE JONC (Malacca Cane), by Alfred de Vigny, with notes and grammatical appendices by V. J. T. Spiers, M. A. Boston, D. C. Heath & Co., publishers. The story is of Paris before and during the revolution of 1830. The story is quiet and entertaining, and the style lucid and agreeable.

*BOOKS RECEIVED.*

REPRODUCTION OF GEOGRAPHICAL FORMS, Redway; D. C., Heath & Co., publishers, Boston.

FROM COLONY TO COMMONWEALTH, Moore; Plato's GEORGIAS; Ginn & Co., publishers, Boston.

## EXCHANGES.

We welcome the New Glasgow *High School Monthly*.... The *Temperance Index* starts out with renewed vigor under its new editor, Firman McClure....The Halifax *Chronicle* advocates the introduction of the Metric system, and it is one of the leading Atlantic Canadian dailies .... The *Colonial Standard* has a good correspondent who presses the same reform....The *American Naturalist* for December has two articles on conchological subjects, one on the Termites, one on Annelid descent with Kingsley's "Record of American Zoology" continued. The notes under the several departments are new and numerous.

## Current Periodicals.

The *Century* for February contains an article by Geo. R. Parkin, A. M., formerly of the Fredericton Collegiate School, on "The Anglo-Saxon in the Southern Hemisphere." It is written in Mr. Parkin's vein, from personal observation of life in Australia, and will find a wide and sympathetic circle of readers in these provinces....The *Popular Science Monthly* for February has several interesting educational articles—"Precision in Physical Training," "Progress in Agricultural Science," "Co-education in the Swiss Universities," "Religious Teaching in the Public Schools."... *Wide Awake* for February has a number of unusually clever short stories. "Sir Grimbald's Ransom" is a ballad of the brave crusading ancestor of Sir Julian Pauncefort, present British Minister to Washington, whose brave lady gave her right hand to ransom her lord from the Saracens ... *St. Nichalas* for February has among other interesting sketches and stories a timely one on "How the Mails are Carried." ... *New England Magazine* (Boston) for February is filled with interesting articles and beautiful illustrations: the "History of Historical Writing in America, No. II," is of great value to the student, and all will read with pleasure the illustrated article, "The Old Masters of Boston."... *The Kindergarten* (Chicago) for Teachers and parents is conducted with rare ability. We can safely say that no home or primary school should be without it....The numbers of *The Living Age* for January 31st and and February 7th contain "Shakespeare's Ghosts, Witches and Fairies," "Birds," "Shut up in the African Forest," "The Origin of the Great Lakes of North America," and other articles. For fifty-two numbers of sixty-four large pages each (or more than 3,300 pages a year) the subscription price ($8) is low; while for $10.50 the publishers offer to send any one of the American $4.00 monthlies or weeklies with *The Living Age* for a year, both postpaid. Littell & Co., Boston, are the publishers.... *Garden and Forest* (New York) contains each week admirably illustrated articles on new or little known plants.... *Vick's Floral Guide* (Rochester, N. Y.), is again to hand and is, this year, more interesting and valuable than ever to the gardener.

## Pamphlets and Catalogues Received.

*Calendar of Prince of Wales College and Normal School*, Charlottetown, P. E. I., for 1890-91; Alex. Anderson, LL. D., Principal; containing examination questions and other useful information-....The *Cornell University Register* for 1890-91; containing list of students (1,347) at present attending the University, Ithaca, N. Y., with courses of instruction, etc ... *Harvard University Catalogue*, 1890-91; with list of students in attendance this year (1,339), courses of study, etc.... *U. S. Board of Geographical Names*; Bulletin No. I.; issued Dec. 31, 1890; published by the Smithsonian Institute, Washington: a valuable brochure on the correct spelling and pronunciation of geographical names ... *Educational Addresses*, McMaster University, Toronto, delivered at the opening of the various departments, Oct. 1890.... *Bulletin of the Natural History Society of New Brunswick*; published for the Society by Barnes & Co., St. John; contains a portrait and sketch of the life of Prof. Ch. Fred. Hartt, by G. F. Matthew, A. M., President of the Society; Zoological Notes, by W. F. Ganong, A. M., and other useful information . . *Papers on the School Issues of the Day*, Nos. IX, X and XI; read at the National Educational Association, St. Paul, July, 1890; published by C. W. Bardeen, Syracuse, N. Y. ... *School Room Classics*, No. VIII: Tiedman's Record of Infant Life, by Louis Soldan, Ph.D.; published by C.W. Bardeen, Syracuse, N. Y.