

The Educational Review.

Devoted to Advanced Methods of Education and General Culture.

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SPECIAL NOTES.

Will those of our subscribers who have extra copies of June, July or August numbers of the REVIEW oblige us by returning them? Our supply of these issues is completely exhausted, and we have orders for them which must remain unfilled unless our friends who may have received additional copies can kindly help us to supply the deficiency. Those who have asked for these numbers will be furnished with them if possible. But subscriptions in future must begin with the month during which the subscription is sent in. We cannot after this undertake to supply back numbers.

When the REVIEW took the place of the New Brunswick *Journal of Education* with a wider field and with an editor for each of the three Provinces, it was confidently expected that the enterprise would eventually prove successful. But we scarcely hoped for that measure of success that has been extended to it. Though only three months in the field its subscription list already amounts to that which its pre-

decessor reached in twelve months; and at the present rate of increase, the prospects are that this list will be doubled at the end of six months! This is very gratifying, and we feel sure that those who have assisted us by material encouragement and warm approval will feel equally gratified by this announcement. Will our friends continue their good offices and help to make the REVIEW an influence in our educational development?

Those who subscribed and paid stock to establish the N. B. *Journal of Education* have been credited with the amounts paid on the subscription list of the REVIEW. If any stockholder has not received this paper it is because a full list of those who contributed such stock was not furnished us until recently. All should receive the September number. Any omissions through change of address will receive prompt attention if we are notified of the fact.

The subscription price of the REVIEW is One Dollar a year—about eight cents a month. There is not a teacher in the three Provinces who cannot afford that sum for a good educational paper. It is an investment that will yield a rich return in the stimulus that it will give to school work. The live teacher should subscribe because the material and new methods that we seek to give each month will render their services more valuable. If it is not convenient to remit the amount of the subscription, those who wish to subscribe should order the paper and remit when convenient.

We heartily thank our very numerous correspondents of last month for their kind words of welcome in receiving the REVIEW.

Kindly acquaint us at once with any change of address or failure in receiving the paper promptly, and we shall attend to it without delay.

We hope that the teachers who assemble at the various County Institutes this fall will see that their names are enrolled as subscribers to the REVIEW. A few earnest words spoken at these Institutes in behalf of the REVIEW by its friends would be of great service.

EDITORIAL NOTES.

IF you wish the REVIEW to be sent to a friend write us a postal card, giving the address, and it will be promptly sent.

AMONG the resolutions passed at the session of the W. C. T. U. in St. John last week, was one favoring compulsory education.

THE article in another column on the Tonic Sol-fa System is from the pen of the Rev. James Anderson, M. A. It presents a most interesting array of facts on an important subject, and we bespeak for it a careful and attentive perusal.

WE expect to have a description of the new buildings of Dalhousie College at an early date for the benefit of our readers. It is being constructed after a full consideration of what is best in the most renowned Universities of Europe and America.

WE feel sure that the gratification of our readers in perusing the article contributed by Chief Supt. Allison in another column will be a sufficient reward to that gentleman for snatching some moments from the pressure of official duties, and induce him to make another "hasty promise" in the near future.

AN Inspector: "The REVIEW is too powerful an ally to have its claims ignored. It deserves not only recognition but the hearty support of every live educationist in the Province. It is performing more than it promised in the first number. I commend it to every teacher. I hope their subscriptions are coming in steadily. The editors of the REVIEW are doing their work nobly. That their efforts may be ably seconded by the teachers all over the Province is my earnest desire."

DR. C. HART MERRIAM, Chief of Division of Ornithology and Mammology, of the United States Department of Agriculture, has published the Ornithologist's Report for 1886. The report is extremely valuable, and we shall take the liberty of referring to it at some future time. Congress makes an appropriation for entomology. In addition, \$10,000 was voted last year for the information collected by Dr. Merriam's Division. This shows the value put by an intelligent government on such educational work as the REVIEW endeavors to incorporate with the book work of our common schools.

THE abolition of residence at the University of New Brunswick goes into effect the ensuing term. The utility of the step is a matter of debate. Though the arguments in favor of residence depend mainly upon sentiment, yet considerations of sentiment are sometimes weighty and far-reaching. College residence, under wholesome and wise restraints, gives a zest to student life that nothing else can supply. If the rooms that have been used for dormitories are required for lecture-room accommodation the question of sentiment should yield to that of utility. So far as we can understand this necessity does not exist; and while there are suitable accommodations, and a sufficient number of students are willing to avail themselves of the privilege of residence and do not abuse that privilege, it seems difficult to understand why it should be denied them.

WE shall publish in our next issue the reports of the committees appointed to revise the courses of study for Grammar and Superior Schools in the Province of New Brunswick. These reports were laid before the Educational Institute at the meeting in July last, received, and ordered to be published in the REVIEW, in order that those interested may have the fullest opportunity to examine the proposed courses and discuss any points therein. These courses have been a fruitful theme of discussion at the meetings of the Educational Institute for some years with but little result. Any changes in the course of study leading from the common school to the university, tending to complete our present excellent course of common school education, ought not to be deferred any longer; and in common with many teachers who have expressed themselves on this point we hope that the Institute may next year be prepared with such a course as they can confidently recommend the Board of Education to adopt.

A DESPATCH from Ottawa states that the Gilchrist Scholarship has been won by Mr. W. C. Murray, of Kings Co., N. B., a graduate of Fredericton University. There were five competitors from Canada, four of whom are in the honors' list. This is an excellent showing for our Lower Province students, for all of them, we believe, hail from this section of the Dominion. Mr. Murray stood third on the list of competitors in the original honors' list. With such results as this, a move ought to be made to induce the trustees of the Gilchrist Fund to continue the scholarship instead of withdrawing it finally, as seems to be the present intention.

THE committees appointed respectively by the New Brunswick Provincial Institute and the Nova Scotia Educational Convention, in regard to the holding of an Interprovincial Convention, are obtaining information to be laid before the executive committees of both bodies. It appears to be the unanimous wish that such a convention should be held. The Nova Scotia Association at its last meeting warmly approved of the step and St. John was suggested as the place for holding the Convention. The feeling in the N. B. Institute was in favor, although there was no opportunity for any discussion of the matter. It remains for the Prince Edward Island Convention, which assembles in October, to take action. We see no serious obstacle in the way of such an interprovincial gathering. If arrangements can be made for a time convenient to all, and to arrange for the holding of sessions of each Provincial Association for the transaction of their legitimate business, the most pressing difficulties would be overcome. Some sacrifices may have to be made, but they will be slight in comparison with the great good that will result from the meeting; and we feel confident that when the time comes to make the final arrangements no obstacle will be regarded as insurmountable.

ENGLISH IN SCHOOLS.

It is a chronic complaint that the ordinary subjects which form an English education are not efficiently taught in our schools; that pupils leave even the higher grades totally unable to write a sentence in an easy, intelligible style, in a fair hand, and devoid of ordinary blunders in syntax and spelling. Are these and such statements facts or exaggerations? If the latter, it ought to be an easy matter to disprove them and correct an error, the repetition of which must be productive of harm. If there is any foundation in fact for such statements, there should be an honest effort—immediate and general—to substitute for our present methods of teaching English, others that would secure better results.

Let us grant at the outset that there is some ground for the statement that the majority of students leave school without the ability to express their thoughts in clear, well-formed sentences, free from ordinary blunders in spelling and syntax. That the ability to write finished sentences requires careful training and a very considerable amount of practice is very evident. As a matter of fact poor composition is not confined to the pupils of our schools—it is very general even with those who have had the advantages of a fair education, and considerable experience in

writing. This may be the result of defective training. And this defective training is not confined to the schools of these Provinces. A few years ago the Superintendent of Education for Massachusetts gathered and tabulated the results of an examination, the purpose of which was to ascertain how many pupils of schools throughout the State could express themselves in a few simple off-hand sentences. These results were marvelously suggestive of what could *not* be done, and in the great majority of cases showed that the efforts to teach the important branch of English composition were a lamentable failure, at least so far as practical results were concerned. We wonder if the test of the ability of pupils a little nearer home would be productive of better results. We fear they would be far from satisfactory, except in the case of pupils with a natural aptitude for English composition. In the great majority of children this aptitude does not exist. Does our present system of teaching beget a taste for English composition, and tend to develop a pupil's powers in that direction? So far as we have observed we believe that it does not.

As the limits of this article will not admit of a full discussion of this point, we shall confine ourselves to a few of the ordinary methods of teaching English grammar and composition.

Take an examination paper given to pupils in the higher grades of our schools, in order to form an idea of the line of teaching which prevails. It has many questions of theory, many definitions of terms, many nice points of grammar to be decided upon; some sentences of improper syntax to be corrected and the rule given, while a large portion of the paper or papers is devoted to analysis and parsing. The essential requirement—that pupils give expression to their own ideas on given subjects—is an exceedingly small factor in the paper. Now it is evident to a thoughtful person that this condition of things should be reversed, that a greater amount of practice and less of theory should be required of pupils. If they have been given a great deal of practice in writing sentences in the lower and intermediate grades, a portion of their work in the higher grades may very profitably be devoted to the study of the principles of grammar and their application by means of analysis and parsing. That pupils have had that amount of practice that will enable them to express their thoughts with tolerable ease and fluency is questionable when we compare results. Why, then, give them sentences to analyze—to take apart, when the rational and common-sense plan ought to be to teach them to compose—to build up sentences. Another source of mischief in teaching English composition is

to place before pupils incorrect expressions and require these to be corrected. If their reasoning powers are not sufficiently matured they will be just as likely to retain and use the wrong form as the right one. The observing teacher will notice every day that while a pupil is able to recite a rule glibly, and apply it correctly, he betrays a total disregard for it the very next sentence he speaks or writes. This results from the want of careful and long continued practice. In order, then, that pupils may compose with accuracy and correctness, they must have a maximum of practice with a minimum of theory, patient correction of errors on some systematic plan, good models of English composition constantly placed before them for their imitation and encouragement. When it is impressed on the educational mind that our present methods of teaching English, especially composition, are defective, and that better and more natural methods are called for, better results will be obtained.

NOVA SCOTIA SUMMER SCHOOL OF SCIENCE.

The following are the principal points decided upon at the annual meeting of the Directors of the Nova Scotia Summer School of Science:

The Directors shall consist of the School Inspectors of Nova Scotia, the Supervisor of the Halifax schools, the Faculty of the Provincial Normal schools, and the Faculty of Instruction elect for the year.

The Faculty of Instruction were elected as follows:
Principal A. H. MacKay, F. S. Sc. (Lond.), President and Lecturer on Zoology.

Professor A. E. Coldwell, M. A., Geology.

Professor F. H. Eaton, M. A., Chemistry.

Inspector E. J. Lay, Esq., Botany.

A. J. Pineo, A. B., Mineralogy.

Inspector A. G. Macdonald, M. A., Physics.

Dr. John Stewart, M. B., Physiology.

Professor J. B. Hall, Ph. D., Sec. and Treas.

J. D. Sprague, Assistant Secretary.

The school will meet next summer at Pictou. To encourage home work during the year, it was proposed to grant a "first year certificate" to students passing a certain standard in each subject or group of subjects.

Such examinations would be entirely optional, would take place during or at the close of the lectures, and would be conducted in three sections in each subject. 1st Section, on book work—the theoretical; 2nd Section, on manipulation—the practical; 3rd Section, on collections—the practical. Something like the following syllabus was suggested:

ZOOLOGY (300 marks, maximum).—

1st Section—Classification down to *orders*, with common

examples, as in Dawson's hand book. Examination in writing—Paper: 100 marks.

2nd Section—Dissection of any 15 type species, as in Colton. Examination oral and practical: 100 marks.

3rd Section—Collection of any 50 mounted and classified species of Nova Scotia, including insects or microscopic slides. Examination ocular: 100 marks.

BOTANY.—

1st Section—Gray's "How Plants Grow," Part I. Examination in writing—Paper: 100 marks.

2nd Section—Dissection of any 15 type species not figured in the book, with outline drawings of characteristic parts of each; and determinations of new plants with the aid of a key: 100 marks.

3rd Section—Collection of any 100 mounted and classified plants of Nova Scotia: 100 marks.

MINERALOGY.—

1st Section—"Common Minerals and Rocks," (D. C. Heath & Co.): 100 marks.

2nd Section—Determination of 15 common species, by blowpipe or otherwise: 100 marks.

3rd Section—Collection of 50 Nova Scotia species: 100 marks.

And so on with the others. It was proposed to offer prizes for the best and simplest home-made apparatus for illustrating elementary chemistry and physics. The matter was referred to a committee.

PICTOU.

The locus of the next session of the N. S. Summer Science School, is a very appropriate selection for such an institution. The first and only great struggle for untrammelled higher education in Nova Scotia took place there. Its Academy has very fair conveniences for scientific work. The town, being accustomed to provide boarding accommodations for a large number of students, will without effort accommodate a large attendance at the Summer School during the academic vacation. Its rail and water communications give the easiest means of access to it from all parts. The carboniferous formation is well represented, with the finest coal mines in America only a few minutes distant by rail. The Boar's Back, of post-glacial age, is within a mile, and another mile will take in a freestone quarry. The Silurian fossiliferous coast of Arisaig might be touched by steamer—or the new red sandstone of Prince Edward Island. The glass works and steel works of Trenton are only across the harbor, whose clear, blue water can match Killarney with a proper sky. And under the sun-dazzling heavens there is no better spot for boating and bathing. The flora and fauna think themselves second to none other on the continent; and it is expected that the botanists and zoologists of the School may come to the same conclusion;

RESULTS OF ARBOR DAY.

Inspector I. B. Oakes contributes an article to the *Woodstock Press* giving some results of the observance of Arbor Day this year throughout New Brunswick. In his own district, which embraces York and the greater part of Carleton, over 2,000 trees were planted, in addition to 1,600 set out in 1886. This is a total of over 3,500 trees, which, with planting shrubs, laying out of flower beds, clearing the school grounds of rubbish and fencing them, and a thorough cleaning of school houses, show excellent results.

Inspector Mersereau, who traverses Restigouche, Gloucester and Northumberland counties, states that the teachers and trustees were very enthusiastic in their efforts, and though he had not at the time added together the results, he thought that some thousands of trees had for the first time been planted on the school grounds of this large inspectorate; also many shrubs and flowers; while in nearly every case the school house was cleaned, and other improvements made upon the school premises.

Inspectors Smith, Wetmore and Carter report a large number of trees planted in their districts, and also that school grounds have been greatly improved and ornamented. In addition to these practical results of Arbor Day, the attention of parents and children throughout the Province has been directed to this subject, and a most commendable spirit aroused on the subject of tree culture and preservation. Let this spirit be fostered in all possible ways, and let special pains be taken this fall to protect for the winter what has already been accomplished with so much zeal and enthusiasm.

AN EXISTING EVIL.

Inspector McLellan, of Pictou, writes in his report to the Superintendent of Education:

Evidences of progress and efficiency of management are generally in inverse ratio to the frequency of changes of teachers. It is rare to meet with a school in which the same teacher is employed for the second term or for a longer period, without noting substantial progress. I do not hesitate to assert that, as far as my observation extends, the greatest single retarding cause in our schools is the frequent change of teachers. I could point to scores of schools in which I have been unable to bring about any appreciable improvement in classification, owing to this cause alone. During the winter term of the past year, 78 teachers removed to new sections and 36 were new teachers; in the summer term 77 removed and 19 new teachers were employed. That is to say, 114 schools in winter and 96 in summer were presided over by teachers who had to acquire their first experimental knowledge of the schools under their charge during

these terms. When we consider that, of the 221 teachers employed in the winter, and 237 in summer, in this district, 70 were employed in graded schools where engagements are, as a rule, much more permanent, we are able to form an estimate of the extent in which changes are made from term to term in our miscellaneous schools. I do not overestimate the number when I say that in two out of every three of the country schools in this district a new teacher is employed each term. Some remedy should certainly be devised for this evil. The only adequate one that suggests itself to me is to do away with the two term system and substitute a single term of ten months. Any disadvantages incident upon this change would, in my humble opinion, be more than counterbalanced by the increased efficiency arising from the continuous services of teachers for such a period. Some of the advantages that would, I think, result from the change are: (1) Increased annual attendance of pupils. Much time is lost in the latter part of each term by intending pupils postponing the date of their entrance till the beginning of the new term. This is especially true of the summer term. Our academies and high schools lose at least 50 per cent. of their attendance from summer vacation to November 1st. (2) Increased efficiency of inspection. With the large districts now placed under the supervision of each inspector, and the corresponding quantity of clerical work necessitated, the time remaining for the actual work of inspection is short. With an annual term the office work would be very materially lessened, allowing more time for visitation. (3) It would avoid the loss of at least weeks of effective work and, as already pointed out, would give much better educational results for the year in those schools where, under the present system, changes are made every term. (4) It would afford teachers more time in which to secure situations, and trustees both better opportunity and additional motive for making judicious selections.

The adoption of a single term would not preclude a change of teachers during the year where necessary. The great desideratum is to make yearly engagements the rule. Payments of government grant and county fund would, of course, have to be made semi-annually. All the data necessary for the first half yearly payment would be a statement of the number of days taught, and the grand total days' attendance made in each school, attested by the teacher as in the case of the annual return. The Government grant and County Fund sheets to be filled by Inspectors at end of each term would require two additional columns, one for the "Amount paid at end of half term," and the second for "Balance due Teacher or Trustees." Any error in the half-yearly statement would thus be corrected at the end of the term. The dates for the opening and closing of a yearly term that would suit the majority of the schools in this district are, I think, the middle of September and the middle of July."

Our experience leads us strongly to endorse Inspector MacLellan's views. There are two sides to the question, we are aware, but the one term system for the year, with perhaps three sub-terms, we are strongly inclined to think a better arrangement than the present one in Nova Scotia.

For the REVIEW.]

OPENING OF THE PROVINCIAL NORMAL SCHOOL OF NEW BRUNSWICK.

In consequence of the change in the length of sessions, work did not begin in the Normal School at Fredericton so early this season as it has done for several years past. After three years of short sessions or terms, of scarcely five months each, it has been found desirable to return to the system of nine-months terms, with which, of course, is connected only one examination for license in the year, instead of two. The six large classes of student teachers trained (?) and licensed during the last three years have not only filled the places of all the holders of local licenses (except in certain French districts), but furnished more than an ample supply to meet the ordinary demand for teachers. Although the numbers in attendance under the long term arrangement may be less for a year or two than when the terms were only one-half as long, still, it is believed that the Normal School will, in the course of two or three years at most, send out a sufficient number of teachers annually to fill all vacancies and supply all new schools.

The entrance examination took place on the 1st and 2nd days of September, inst., and the results were announced on Monday morning, the 5th. Of 124 applicants who presented themselves, 74 made the required average of marks and were admitted; 32 others were admitted conditionally, two of whom preferred not to remain, and 18 failed to pass. Of those who came forward on the 6th, claiming admission without examination, 13 were admitted on departmental certificates of Standard VIII.; 5 as holding certificates of matriculation at the University; 2 as holding valid licenses, and 1 as a graduate in arts. Nine applicants presented certificates which did not entitle them to admission, but these were admitted on supplementary examination.

The formal opening exercises of the school were held on Friday, the 9th inst., commencing at 2.30 p. m. On the platform were the Chief Superintendent who presided, His Honor the Lieut.-Governor, Dr. Harrison, President of the University, the Principal and Staff of Instructors of the Normal School, and the four Teachers of the Model Departments. In the course of his opening address Principal Mullin read the following statistical statement :

CLASSIFICATION OF STUDENT TEACHERS ENROLLED.

I. *By Counties.* Albert, 4; Carleton, 11; Charlotte, 17; Gloucester, 5; Kent, 11; Kings, 6; Madawaska, 2; Northumberland, 8; Queens, 5; Restigouche, 5; St. John, 22; Sunbury, 6; Victoria, 1; Westmorland,

8; York, 32; (P. E. I.), 1; (Newfoundland), 1; total, 145.

II. *By Religious Denominations.* Baptist, 27; Church of England, 13; Free Christian Baptist, 14; Methodist, 31; Presbyterian, 34; Roman Catholic, 23; Others, 3; total, 145.

Young men, 20; young ladies, 125.

English department, 134; French department, 11.

Admitted on examination, 113; otherwise, 21. 134, English department.

Chief Superintendent Crocket cordially welcomed the students to the institution, and addressed them upon the true character of the work before them. "The New Education," so-called, was not new in its principles, but had come down to us from the ancient ages. They should ever seek to gain an intelligent apprehension of the subjects brought before them, and to lead their pupils to the same. Ideas were before words. True study was not mere learning.

Sir Leonard Tilley, in his genial way, spoke of the educational progress of the last thirty years, and expressed his conviction that the affections of children must be trained as well as their intellects. Teachers should lead by cords of love rather than seek to drive with the rod. Speaking as Chairman of the Board of Education, he welcomed the students to the privileges of the Normal School, and in closing said the garden and grounds of Government House would always be open to them on Saturdays, and also the conservatory in the winter months.

President Harrison followed His Honor's kind invitation by inviting the students to visit the grounds of the University, and also the library, museum and observatory, at such times as might be fixed by Principal Mullin and previously made known to him. He said he regarded the acceptance by the Normal School of certificates of matriculation at the University as a token of the goodwill of the former institution towards the latter; and that this goodwill would be reciprocated by the University in admitting holders of first-class licenses to the second year's classes in college, upon their passing a satisfactory examination in the classics.

The student teachers, who had sung the national anthem, as usual, on the entrance of the Lieut.-Governor, now sang, very appropriately,—

"For the blessings that surround me,
Thanks to thee, my native land!"

After which the Principal thanked the visitors for their presence, and for the interest manifested by the citizens generally in the welfare of the school. Having sung the dismissal hymn, the student teachers marched to their class-rooms, and the proceedings were at an end.

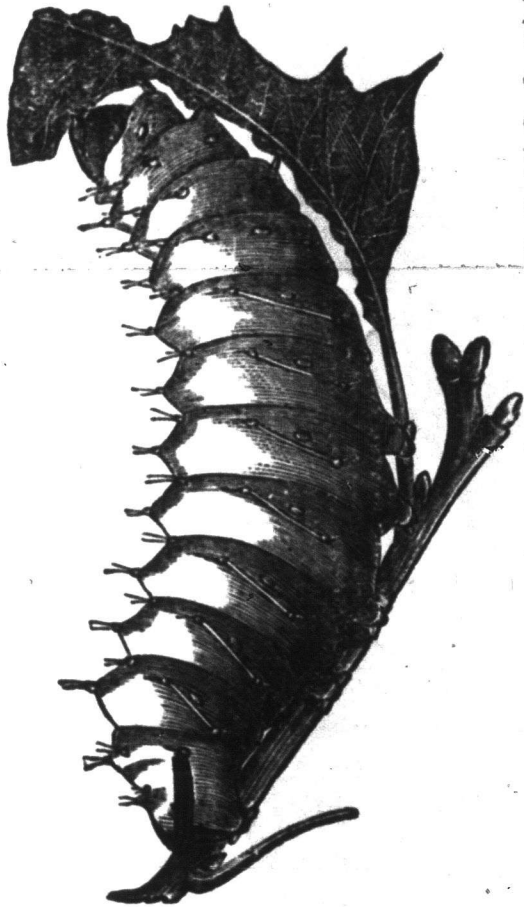
FERNDALE SCHOOL.

NO. IV. A CANADIAN SILKWORM MOTH.
(*Telea Polyphemus*. Linn.)

TEACHER. See this large September caterpillar eating a leaf. Do any of you recognize it?

SCHOLARS. Yes, larva of the Cecropia Emperor-Moth.—No, it's different—quite different, except in size.

T. You are correct now. We have not examined this caterpillar before. It is called the "American Silk Worm,"



THE LARVA.

because it is the only native American caterpillar which has been extensively reared on account of the silk it produces.

S. Was it found in this country?

T. Yes; Jack, tell us where you found it.

JACK. On a plum tree, and I saw one eating the leaves of a rose bush once.

T. They are often found on oak trees and sometimes on the maple and elm. But now let us describe it. How long is it?

S. About three inches. It eats very fast and its jaws move sideways instead of up and down.

T. Very good. They all eat in that manner. This great caterpillar was hatched probably in June from a small roundish egg about the tenth of an inch in diameter. When hatched it would take about six thousand of them to weigh one ounce. It eat, and in ten days grew ten times as heavy; in twenty days, sixty times; in thirty days, six hundred and twenty times; in forty days, one thousand eight hundred times; in fifty-six days, four thousand one hundred and forty times its original weight, very probably. At least such is the history of one of them. It eat three-quarters of a pound of leaves to grow to that size, and changed its skin five times.

S. Do they lay many eggs?

T. The female moth lays between two hundred and three hundred, probably.

S. It should be easy for us to raise silk, then, in Nova Scotia,

T. Not so easy. An ichneumon fly and some other flies are its deadly enemies. A Mr. Trouvelot had a million of them growing on bushes in a five acre field in the United States, but there was a net over every bush.

S. How long do they keep on growing?

T. In less than a fortnight the eggs are hatched, and in a little over two months after it will be like the specimen before us, ready to spin its cocoon. But tell me what you see yourselves now. How many rings or segments, as they are called, in its body?

S. Thirteen.

T. How many legs has it?

S. Three small pairs in front, four broad pairs in the middle, and a pair at the end, like those of the Cecropia caterpillar.

T. The color of its head—

S. Is brownish.

T. Of its body—

S. A light, yellow green.

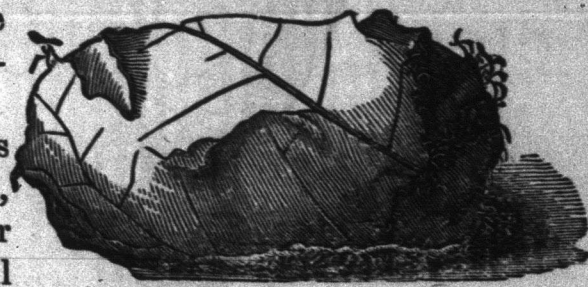
T. On each segment there are several reddish tubercles with hairs—how many on each?

S. Six.

T. Find the spiracles, or breathing pores, one on each side of each segment. They are of a pale, orange color. What else do you see?

S. Seven slanting lines of a yellowish color on each side, and a brown V at the end.

T. We shall put it into this large jar with fresh oak and plum twigs, when we shall see it collect some leaves into its cocoon for an outer covering—drawing the leaves together with its silken fibres, which it forms like the Cecropia caterpillar. This is what the cocoon may be like when finished.



THE COCOON.

In a few hours it can hide itself, and in four or five days it will have finished its inner case. These silk fibres by proper treatment can be unwound from the cocoon in one long unbroken fibre, only a little coarser than that of the more common silk worm of commerce. Three or four days after the completion of its cocoon it sheds its old skin, and becomes a chrysalis or pupa within its well constructed, silken, double-walled chamber, in which it passes the winter. Here it is.



THE CHRYSALIS OR PUPA.

About the first of June, next year, the perfect insect will find its way out as did our Cecropia moth,

Here they are figured. Try to make an outline drawing of them. Let us look at the specimens you caught last June. What is the general color of their wings?

S. A sort of yellowish brown, some are of lighter and some of darker shades.

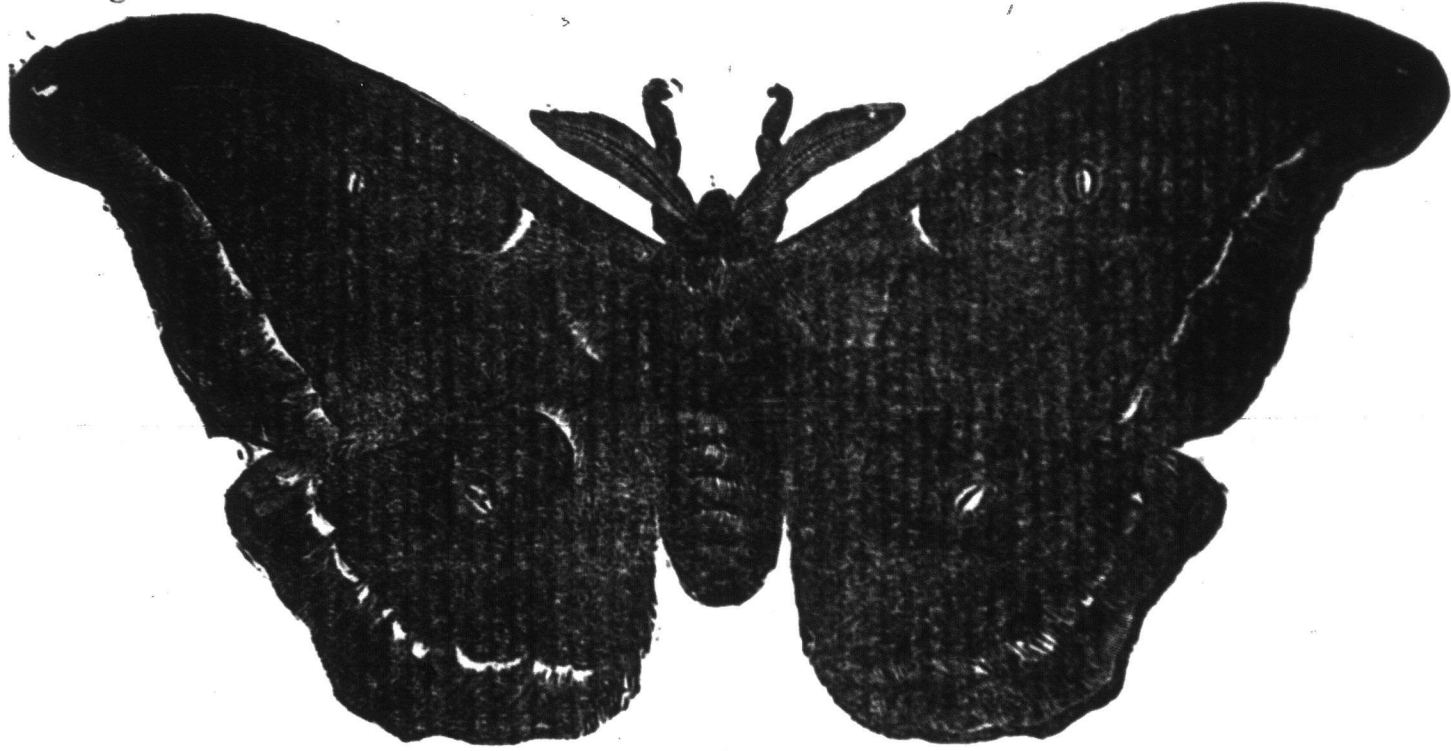
T. Now describe the lines, beginning with the base of the wings.

ed by a large oval spot of brownish black, with some blue specks.

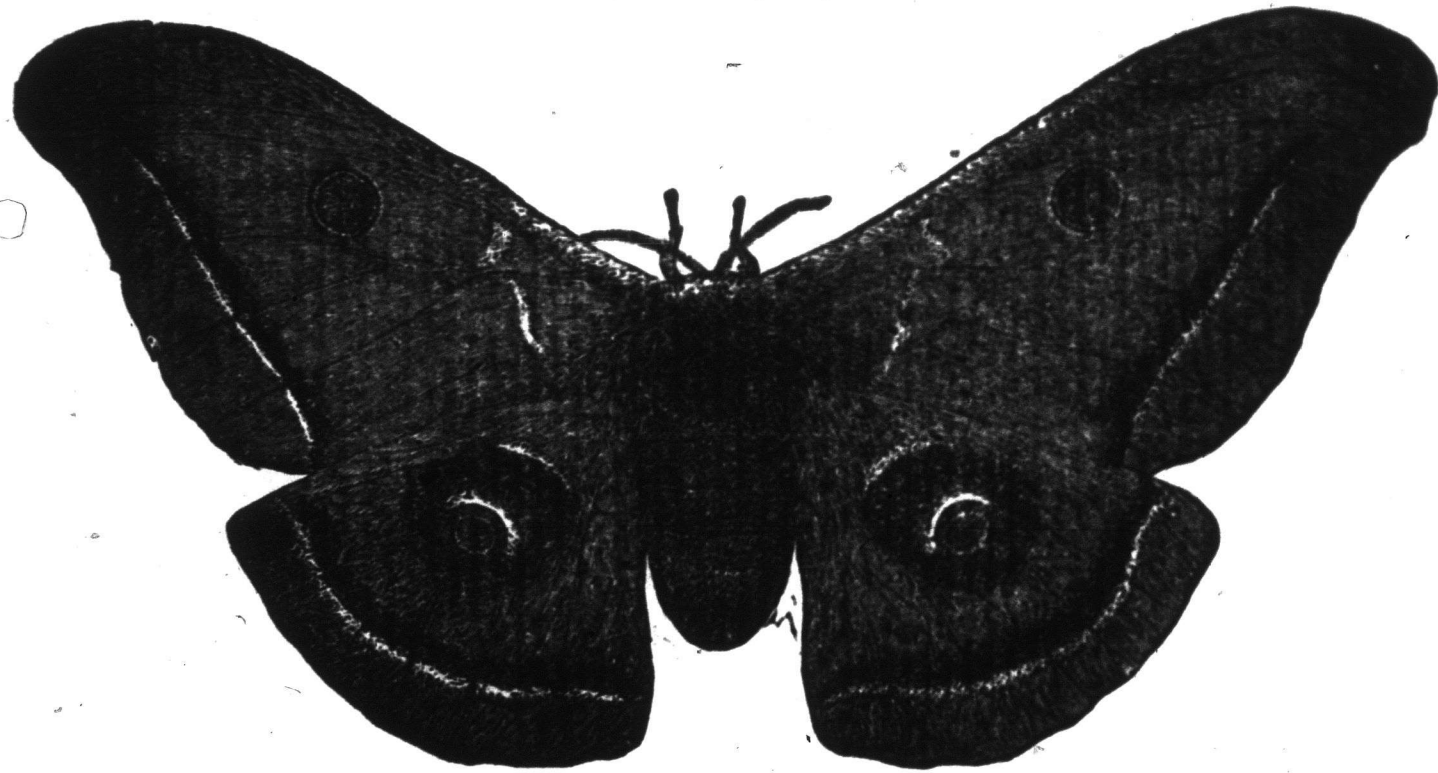
T. Pretty near it. Point out some difference between the male and the female.

S. The eye-like spots on the wings show better in the female. Its body is larger and its antennæ are more slender.

T. The antennæ of the male is very bushy—more



THE IMAGO (Male.)



THE IMAGO (Female.)

S. At the base an irregular whitish band, with reddish edges. Near the margin is a purplish white line bordered with deep brown.

T. The spots—

S. The spots are like eyes in the middle of each wing. Those on the front wing are rounder with yellow and black edges. Those on the hind wings are more eye-like, bordered with yellow, with a line of black, edged with blue above, the whole surround-

properly, pectinated, which means "comb shaped," from the Latin, *pecten*, a comb. You will notice that the colored dust which paints these wings is simply colored, generally two or three tooth scales, as seen under the microscope. These scales might be brushed off, then the wings would lose all this beautiful coloring. All insects of this kind belong to the order *Lepidoptera*, from the Greek words *lepides*, scales, and *ptera*, wings. When the antennæ have knobs on

their ends we call them butterflies; when they are pectinated, or when they have no knobs on their ends we call them moths.

S. I never saw any of these moths flying about.

T. Very likely. But the boy who caught our specimens may tell us why; well, Jack.

JACK. They fly only at night, and sometimes make as much fuss as a bat.

T. Linnæus named this moth *Telea Polyphemus*. We shall write this name on the label pinned below our specimens, as this is the name by which it is known by entomologists in every part of the world. Polyphemus was one of the fabled Cyclops, a huge cannibal giant living in a cave. He had only one large eye in his forehead. The Greek wise man, Ulysses, saved himself and several of his companions from this monster by putting out his single eye. Each wing of this moth has a single eye. Hence the origin of its specific name—Polyphemus.

AMONG THE CONSTELLATIONS.

No. I.

"He who would scan the figured skies,
Its brightest gems to tell,
Must first direct his mind's eye north,
And learn the Bear's stars well.

ANON.

So, out let us rush, the first clear September night after the REVIEW comes to hand, say about nine o'clock. The moon will not be up then to pale the glories of the sparkling sky jewels. And the Great Bear, *Ursa Major*, will be crouching just over the northern horizon, with her great three-star tail swinging up to the northwest. Its ethereal outline is too unsubstantial to make out at the first trial, so with the flaming sword of imagination let us slash down the sky just a little west of the north point, and we shall cut it in two, the shoulders and head to the east, the hind half to the west. This hind half—the tail and half of the body—includes quite neatly that group of stars called the Dipper. Four stars mark the outline of the Dipper, and three stars extending to the west make its handle, which is also the tail of the bear. These seven stars have been known under various names, such, for instance, as Charles's Wain, the Plough, David's Car. The quadrilateral of four stars form the body of a plough, or the four wheels of the wain or car, while the three stars form the handle of the plough or the single shaft or pole of the wagon or car. One pious writer, Kircher, sees in the four stars the bier of Lazarus, and in the three stars of the tail of the bear, Mary, Martha and Magdalene. The poet Schiller saw Peter's ship on the sea of Galilee typified in this cluster.

The two front stars in this group are called the Pointers; because if a line be drawn from the lower through the upper, and produced five or six times their distance, it will pass near a solitary star of the second magnitude called Polaris, or the North Pole Star, the height of which above the horizon is nearly exactly equal to the latitude of the place where the observation is made.

The stars of a constellation are named by astronomers after the Greek letters. But the most conspicuous stars are also known by their older Arabic names. The highest of the two pointers, Alpha, is called *Dubhe*, the lower, Beta, *Merak*. Gamma, the other bottom star of the Dipper, is *Phecda*. Delta, the top star of the body of the Dipper from which the handle starts, *Megrez*. Epsilon, the next star, *Alioth*. Zeta, the middle star of the handle, *Mizar*. Eta, the last star, *Alkaid* or *Benet-nasch*.

Mizar is a splendid double star, the companion being a bluish telescopic star of the eighth magnitude. *Alcor*, of the fifth magnitude, is a short distance from Mizar when seen through a telescope, and may be seen with the naked eye extremely close to it, the two appearing as a double star. Six of the stars of the Dipper are classed as of the second magnitude. Delta (*Megrez*) being of the third.

About eleven o'clock, middle of September, the two pointers will be nearly vertical over the exact northern point of the horizon, and, of course, directly under the North Pole star.

"Take the glass,
And search the skies. The opening skies pour down
Upon your gaze thick showers of sparkling fire;
Stars crowded, thronged, in regions so remote,
That their swift beams—the swiftest things that be—
Have travelled centuries on their flight to earth.
Earth, Sun, and nearer constellations! What
Are ye amid this infinite extent
And multitude of God's most infinite works?"

HENRY WARE.

THE PLANETS FOR SEPTEMBER.

Venus is evening star until the 21st, then morning star.

Jupiter is evening star, and is in the constellation Virgo, a little east of the bright star Spica.

Mercury is morning star until the tenth, then evening star.

Saturn is morning star, and is in the constellation Cancer, and not far from the star Pollux, which is to the northwest, nor from Procyon which is southwest of it.

Mars is small, and about four moon breadths from Saturn Sept. 1st.

The moon passes by Mars on the 14th, by Venus on the 17th, and by Jupiter on the 20th. The other planets are not favorably situated to be seen.

NATIONAL EDUCATIONAL ASSOCIATION OF THE UNITED STATES.

The editors of the *EDUCATIONAL REVIEW* — a journal for which I both desire and anticipate a most successful career—have asked me to furnish in some detail impressions produced by the recent meeting of the National Educational Association of the United States, at Chicago. The subject is a worthy one, demanding for its proper treatment time and care; but I can send only a few hasty jottings, with the hope that they will be accepted as redeeming a somewhat hasty promise.

By way of preface: I was fortunate enough to secure passage in the special train of Pullman cars which conveyed the great body of New England delegates from Boston to Chicago. If education be not a fraud, one does not often fall in with a caravan transporting such a weight of wisdom as did those eleven superb "sleepers," which in two days and nights carried us through Massachusetts, Vermont, Quebec, Ontario, Michigan, and little corners of Indiana and Illinois, into the most wonderful city of this wonderful continent. "All classes and conditions" of the educational service were represented in our company of nearly four hundred souls—college presidents, principals, professors, superintendents, and a solid contingent of "the rank and file," in which, as is usual now-a-days, the "fair women" outnumbered the "brave men" three to one. I see that I have omitted to specify "the Generals," of whom we had two or three, one combining with that august military distinction the reverend appellation of D. D., and the principalship of one of the leading New England Normal schools!

An exceedingly well arranged and well appointed excursion was that! A courteous official of the Grand Trunk accompanied us throughout the entire journey, and both personally and through his subordinates, anticipated every want. On the whole route but one meal had to be taken at the ordinary railroad restaurant, such hostelries as the Windsor and St. Lawrence Hall, at Montreal, and the Queen and Rossin at Toronto, opening their doors to the hungry pedagogues at most moderate rates.

The first impression produced by the Association itself was that it was a huge affair; so large, indeed, as to threaten to become unmanageable. The central location of the city where the meetings were held, exceptional travelling facilities, and the growing influence of the body itself, combined to attract an attendance far surpassing that of any previous session. It was authoritatively announced that upwards of ten thousand teachers were recorded as present! Soon,

however, I had the pleasure of seeing that if any danger of disorder or disintegration existed it must have its basis in the mere fact of *number*; nowhere could one discover any visible lack of earnestness or enthusiasm. In every quarter there was abundant evidence of a controlling unity of purpose and aim.

The opening session was held in the great hall of the Exposition Building, that famous scene of momentous political gatherings, where Blaine and Cleveland, and so many other Presidential candidates have been nominated for either victory or defeat. This meeting was of a more general character than any that followed. How many were crowded into that vast hall, with its far-reaching spaces and enormous galleries, I cannot say. The papers of the next morning variously estimated the attendance at from fifteen to twenty thousand. A gentleman beside me remarked that he had never seen the hall more crowded at one of the great political conventions. But the occasion was one perhaps better fitted to arouse enthusiasm than to promote intellectual edification. For the opening hour Thomas' splendid orchestra lent to the gathering the inspiration of music. Then came a gratifying display of the pride taken by the American people in their system of public schools. The state, the city, and the county, through their representative officials, all came forward to welcome and do honor to a profession to which the progress of American civilization owes so much. The literary exercises, while intrinsically excellent, were somewhat marred in their immediate effectiveness by the intense heat—for, unfortunately, the sessions of the Association synchronized with the hottest week of the hottest summer the western prairies have ever felt—by the rustling of ten thousand fans, and by the difficulty of hearing involved in the vast distances of the great auditorium.

The regular work of the Association was mapped out somewhat thus:

1. During the morning and evening sessions the Association met as an integral body and discussed the general questions of the programme. Each of these questions was brought forward by some five or six speakers, each dealing with some one of its special aspects or relations. These general heads included such lines of thought as these: "The Psychological and Pedagogical Value of the Modern Methods of Elementary Culture;" "The Relation of the University, College, and Higher Technological Schools to the Public System of Instruction;" "The Means and Ends of Culture to be Provided for the American People beyond the Ordinary School Period;" "The Place Manual Training should occupy in a System of Public Schools;" "What can be done by Educators to

enlighten and arouse the people, and excite public sentiment in favor of Education?"

The chief papers discussing these general topics were followed by brief "talks" or "discussions" on the same lines, from certain selected speakers to whom proof sheets of the larger essays had been sent.

2. The afternoon sessions were devoted to what was technically called "departmental work." That is to say, the Association met in separate sections to consider practical questions and matters of detail more minutely than was possible at the general sessions. The latter were held in the Central Music Hall, a spacious and well appointed auditorium; for the former, halls, theatres, church vestries, and opera houses were utilized, according to convenience of location.

I attended as many of these "department" meetings as I could consistently with the physical maxim, "a body cannot be * * *," and was much interested in all that I saw and heard. It was here that the expert and the specialist had fullest swing, and this fact needed to be borne in mind by one who, like myself, has to keep an eye for all sides of the educational problem. Listening to the enthusiastic exposition of the kindergarten system, you would for the moment be led to regard no human being outside of babydom as of much account, while the enthusiastic advocate of manual training declaims under a seeming conviction that, as educational instrumentalities, the blackboard and dictionary are but poor affairs as compared with the auger and the turning-lathe. But on reflection one is soon led to see that in the wide world there is room for all these experts and specialists—*extremists*, if you will—and that there is work for them to do in contributing to that salutary equilibrium of force which in some ages of the world has been sadly lacking.

Most of the papers presented at the regular sessions were exceedingly able productions, though one or two fell conspicuously below the general level. Dr. Angell and General Francis Walker, Presidents respectively of the University of Michigan and of the Boston Institute of Technology, most creditably represented the higher institutions of learning, and eloquently deplored the lack of harmonious connection too often existing between the American College and the American Public School.

The discussions that moved directly along the line of public education, and considered its pending problems, were in a marked degree free from dogmatism. While defects were pointed out and dangers recognized, their general tone was confident and hopeful. As the great gathering came to an end, and the thousands of teachers turned their faces eastward,

westward, northward, southward, it was felt that the noble cause, under whose banner they had met, was stronger than ever in their hearts and in the hearts of the people.

I have been in too much of a hurry to be brief, and so have not left myself space to do more than mention the admirably planned and admirably executed educational exhibit that formed, I suppose I may say, an integral part of the Association. The personal courtesies received from the President, Mr. Sheldon, editor of the well-known *New England Journal of Education*; the Secretary, Professor Canfield, of Kansas, who has intimate personal friends in my own city of Halifax, and other members of the Association, can never be forgotten.

D. A.

CURIOSITIES AND MONSTROSITIES IN SCHOOLS.

My avocations have led me to see much of schools. It may be interesting and instructive to teachers if I give a few examples of the many things I have thus seen and heard. The experiences which I shall record will not extend backwards beyond the educational renaissance of which we are wont to boast: the "dark ages" are therefore excluded.

A few years ago I visited a Normal School, and was present at a class exercise in English grammar, and another in geography, each of an hour's length. In both cases the teacher—or professor, if you prefer—held a book in his hand and asked questions from it, just as pedagogues did when you and I were boys. The pupil-teachers answered the questions that the teacher put to them from the elementary works from which the lessons had been assigned. I thought as I saw and heard, that the conservative element would still preserve the world from dangerous revolutions.

I once visited a collegiate institution and was, by invitation, present at a lecture, so called, in history. The exercise was of this kind: Some few paragraphs had been assigned as a lesson to be studied. Questions were asked by the professor (?), as in the case before instanced, and occupied fifteen minutes. The remainder of the hour was spent by the college officer in reading to the class from a new book he had just received on some branch or other of history. I thought—well, it is no matter what I thought. The world consists of two classes: the first achieve greatness; on the second greatness is thrust! In one way or other you or I may yet be a professor! There are "chapters of accidents," and "the most unlikely things always happen."

I visited one of the common schools of the country, supported in part from the public treasury. On the

walls were conspicuously hung cards with passages from a catechism. This surprised me, and I made some quiet inquiries of the teacher about the circumstance. She had many qualities desirable in a teacher; but her reply to my questions rather astonished me. "You know," said she, "that what is on the cards is not true; but I am required to teach it." I do not know how she knew that I "knew" that the cards were the vehicles of error. The same clairvoyance might have taught her that I considered it very wrong for her or any one else to teach what was known, or even suspected, to be false.

I once visited, in company with a school commissioner, a number of schools, in which a foreign language was a substitute for English. The law made no provision for the substitution; but the government was too "wise in their generation" to interfere, and so the books prescribed by the Council of Public Instruction had been relegated to retirement and dust. The children, small and large too, in many cases, supported their trembling steps in reading by the aid of a pointer—half of an iron or steel knitting needle! This was the method of reading. There were no pauses, except perhaps in the body of the words, from the beginning of the line to the end of it, when custom and the teacher alike allowed of a stop. This led me innocently to remark to the commissioner that the children did not seem to understand what they read. "No," said he, "they don't, but when they become older they will." I think it doubtful whether the charitable assumption would ever be realized, for it was the "Lives of the Saints" that was the reading book.

Once again: It was my lot to ascertain and report as to the educational status of a young lady of some sixteen or seventeen summers, who had been generally at school and had studied at a ladies' seminary for a couple of years, and who was, withal, of fair intellectual powers. In accordance with my instructions, I was to decide as to what was her knowledge of the elementary branches. I found that in arithmetic she was much perplexed with numeration; and that she could not explain and did not know why it was that she "borrowed" in subtraction. It was just so with reading and elocution, with grammar and analysis, and so throughout the scale. We conclude, then, that there are accredited ladies' seminaries which one may attend for years, and yet know next to nothing—for which knowledge they must pay hundreds of dollars.

One of my strangest experiences in this field was the hearing of a lecture on education by an educational officer, one of whose duties it was to instruct and enlighten the country on educational matters.

The lecture was designed to show what education was; and the lecturer would begin at the beginning, and lay his foundation. The foundation was the derivation of the word, and consequently, according to the lecturer, its true meaning. This is a misleading assumption, but my present business is not to show it. We were informed, and with great unction, that the word education was derived from "the Latin, *educō*, to draw out," and that this was precisely what was meant by education—the drawing out, or unfolding, as it was explained, of the faculties of the mind, etc., and the assurance was iterated and reiterated till the dullest could not but understand and the most treacherous memory retain the words or the sentiment. And the great man never suspected that he was in error—that his foundation was false and the superstructure erected upon it delusive—but was evidently greatly pleased with his performance.

Once more, and I am done: On a certain occasion as I entered a school—it was a public school—I heard a little girl reciting the Lord's Prayer in Latin. As it was an unusual occurrence, I listened with interest; nor was my interest diminished when I found she gave every word correctly and without a single slip, even the slightest, in the pronunciation. There were reasons which led me to conclude that she did not know the meaning of the words she was uttering; but I thought I would ask the teacher—more, however, for the sake of hearing the reply than for information. The response was—"Oh, no, she does not understand it." Do not let us blame the little girl, or even her teacher, who was herself ignorant of Latin; lest in doing so we condemn ourselves. Is it certain that we quite understand all that is contained in the Lord's Prayer—or, "leaving the first principles" of religion, whether we more than half comprehend what is embraced in the creeds we respectively profess to hold—or, to proceed still further, whether we have a very clear conception of any of the branches about which we talk so complacently and so learnedly? At least we have it on record that a wiser man, and a more profound scholar than any of us, thought very lightly of his attainments. It is not necessary to quote his language, for the words are "household words" in all our families and schools. The dear little child reciting the Lord's Prayer in Latin, and not understanding a word of it, is a type of us all.

EDUCO.

Wolfville, N. S., Aug. 10, 1887.

The highest mountain in the world is said to be Mt. Hercules, in New Guinea, soaring to an altitude of 32,786 feet.

TONIC SOL-FA NOTATION OF MUSIC.

Music should have a place in the school-room—in every school-room, in every home. Music makes the work of the school-room more cheerful, and has a soothing, restful and invigorating influence. Further, it is helpful to discipline. By its pleasant, rhythmic flow it secures order in the various necessary class movements. These in themselves should be sufficient to secure a place for it in the school-room.

But music has an educational power apart from and more important than this: of helping on the other work of the school. At this time I shall only speak of its aid towards physical culture and development. It is well to have a sound, cultivated, educated mind in a strong, healthy body. In large towns and cities intellectual education is cared for without sufficient opportunity for the proper development of the body. This partly accounts for the unfavorable comparison of city with country children, and also for much of the sickness attending or following work in high schools and colleges.

Correct breathing is an important factor towards securing good health. Vocal music, with the preparatory drill necessary for the production of good, pure musical sound, strengthens and increases the breathing capacity of the lungs. Voice training, and the physical exercise attending it, secure right position of the shoulders, broad chest, and deep, steady breathing, and so reduce to a minimum the evil effects of sitting so many hours at the desk. Further, the distinctly marked rhythm in music is conducive to the rhythmic action of the vital forces.

Dr. B. W. Richardson, a great authority on matters of health, says, "It is one of the points of life to get music into the home. If a doctor visits a sick child, and is told that it has been singing, he knows that an advance has been made in the health of that child. We associate the idea of singing with mirth, and with health, and wherever there is a family that cultivates music, and that is fond in the evening of passing the time away by the singing of delightful songs and hymns, that family is a happy and a good family. Let all the nation be a singing nation, and we have direct evidence of a happy nation."

If singing is to be taught in the schools as a branch of education we should use the simplest, the most natural, most intelligent methods and notation. The Tonic Sol-Fa methods and notation have been proved to have these points clearly in their favor.

Principal Chas. A. Hoyt, New Jersey, says, "I have secured better results with the Tonic Sol-Fa in three months than in three years with the staff sys-

tem. My grammar department can now, after only three months of the Tonic Sol-Fa, sing any ordinary church music at sight. The results with even the smallest primary children (5 years old) are perfectly surprising."

Rev. E. P. Parker, North Carolina, says, "I regard Tonic Sol-Fa as the greatest musical invention. * * * It is emphatically the system, the notation—nature's method."

Miss A. Brooks, Kindergarten teacher, says, "I regard the introduction of the Tonic Sol-Fa system as one of the great movements of the century."

At the annual meeting of the Tonic Sol-Fa College, in Exeter Hall, London, in June, the chairman said: "In the School Board for London, in every single department of every school, the children are taught to sing by note. In every single one of these departments, save one, they are taught to sing according to the Sol-Fa method." The Secretary stated at that meeting that in the last six years the College had granted on an average 16,980 certificates, and last year 22,277.

Professor Cringan, Toronto, who has thirty-four schools, with about 14,000 pupils and 200 teachers under his care for musical instruction says, "In order to demonstrate the usefulness of the system, I will take a class of children who have studied from Sol-Fa not more than eight months, and have never had a lesson on the staff notation, and after an hour's transition from Sol-Fa to the established notation they will read at sight any tune containing modulation to related keys, or relative minor, written by any musician of known impartiality, such as Mr. A. E. Fisher or Mr. Torrington."

J. A.

Musquodoboit Harbor.

NEED OF A MINING SCHOOL.

The mineral wealth of Nova Scotia has long been known, but comparatively little has so far been done towards its development. Coal and gold have both, it is true, been mined to a considerable extent, but the yearly results, compared with the enormous extent of the coal and gold districts, are almost infinitesimal.

While the mineral deposits of other countries have been rapidly developed, and capitalists have always been eager to invest in what, when honestly managed, is one of the quickest means of securing wealth, our own business men have held aloof from mining; and, whenever they have had the opportunity, have done all in their power to prevent foreign capital coming into the country. Having no knowledge of mining

and no faith in mines, they are giving truthful expression to their opinions in decrying the mineral wealth of the country, which only proves how densely ignorant they are in mining matters, and the necessity of spreading knowledge of the immense value of our mineral resources. The trouble heretofore has been that mining operations have been carried on by enthusiastic but incompetent men. They have had no practical knowledge of mining, and, as a consequence, have attempted to develop properties with entirely insufficient capital. As a result, many good mines have been partly opened up; but, as large profits were not realized, and as the working capital was entirely insufficient, have ultimately been abandoned and pronounced worthless. Individuals have lost heavily in these ill-planned ventures, and forever after have been loud in their condemnation of mining. These are the men who are continually decrying the mineral wealth of the country, and, influenced by kind-hearted motives, we have known of instances where they have taken the trouble to warn outsiders against investing in Nova Scotian mines, instancing their own losses as arguments against their value. Of late years a great improvement is noticeable. The management of mines has fallen into competent hands, and, backed by sufficient capital, the results have been surprisingly successful. The protective duties on iron have infused new life into that industry, and capitalists now see their way clear to realize large profits in working the iron mines, which lie in such convenient proximity to our coal fields. No country in the world offers greater facilities for the mining and manufacture of iron, and the large deposits of this mineral which now are unworked are destined before long to bring millions of money into the country, and to give profitable employment to thousands of smelters and miners. We have many good miners, mainly self taught, who are in demand in all parts of the world. If they had had the benefits of special instruction in the science and theory of mining, they might have risen to positions of eminence as mining engineers, but lack of scientific education has held them back. What is now needed is a mining school, where young men could receive scientific training. In no country is a mining school more wanted than in this. Would it not be well for the Government to move in the matter?—*Halifax Critic*.

In India from 1876 to 1886, the number of letters transmitted by the post office increased from 119,000,000 per annum to 238,000,000. Newspapers transmitted increased 115 per cent. This is a measure of the advance of education.

INDUSTRIAL TRAINING IN THE PAST.

In 1685 Thomas Budd, a native of England, residing in the colony of West Jersey, wrote and published "a small treatise," in which he gives his readers what he deems to be the proper system of education. It will be seen that manual training enters largely into his system. We quote from the *Popular Science Monthly* as much of the treatise as deals with the subject of education. He writes:

1. "Now it might be well if a law were made by the Government and General Assemblies of Pennsylvania and New Jersey that all persons inhabiting in the said Provinces do put their children seven years to the public schools, or longer, if the parents please."
2. "That schools be provided in all towns and cities, and persons of known honesty, skill and understanding be yearly chosen by the Governors and General Assembly to teach and instruct boys and girls in all the most useful arts and sciences that they in their youthful capacities may be capable to understand, as the learning to read and write true English, Latin, and other useful speeches and languages, and fair writing, arithmetic, and book-keeping; and the boys to be taught and instructed in some mystery or trade, as the making of mathematical instruments, joinery, turnery, the making of clocks and watches, weaving, shoemaking, or any other useful trade or mystery that the school is capable of teaching; and the girls to be taught and instructed in the spinning of flax and wool, and knitting of gloves and stockings, sewing, and making of all sorts of useful needle work, and the making of straw work—as hats, baskets, etc., or any other useful art or mystery that the school is capable of teaching."
3. "That the scholars be kept in the morning two hours at reading, writing, book-keeping, etc., and the other two hours at work in that art, mystery or trade that he or she *most delighteth in*; and then let them have two hours to dine and for recreation; and in the afternoon two hours at reading, writing, etc., and the other two hours at work at their several employments."

The chief features of Budd's system are very like those recognized of supreme importance to-day—that education should be made compulsory; that boys and girls should receive that instruction that will best prepare them for the duties of after life, not forgetting the culture of the mind; that the elective system should be adopted, at least in industrial education; that state provision should be made for education; and further, in sections not quoted above, he iterates the necessity of moral and religious training in schools, and that no distinction be made between the children of the rich and poor,

PERSONAL NOTES.

The death is announced from Stanstead, Quebec, of Rev. Dr. Kennedy, formerly Principal of the Ladies' Academy at Sackville.

John McMillan, M. D., of Pictou, has been appointed deputy examiner at the local matriculation of the medical faculty of McGill, to be held at Pictou.

Professor Henry Drummond, F. R. S. E., F. G. S., of Edinburgh, author of "Natural Law in the Spiritual World," is expected to visit the collegiate institutions of these Provinces during the present month.

Rev. Dr. Thring, of Uppingham School, England, whose stirring address to teachers delighted so many readers of the July number of the REVIEW, has been spending the summer in the Highlands, at Birnam Wood, so well known to the readers of Shakespeare's "Macbeth."

Chas. H. Fullerton, B. A., of King's College, has been appointed Junior Assistant Master of the Collegiate Academy, Windsor. The Rev. Dr. Willets will now be assisted by such a staff as will enable him to maintain that well earned prestige that belongs to his school. Mr. F. T. Richardson, Trinity College, Dublin, has been appointed Senior Assistant.

We understand Miss Burgoyne, one of the teachers in our public schools has had the offer of the position of teacher in one of the departments of the Presbyterian Ladies' College, Halifax, but the public will be pleased to learn that the offer has been declined.—*Windsor Tribune*.

SCHOOL AND COLLEGE.

St. Joseph's College, Memramcook, opened September 1st. The number of students enrolled is already 130, and it is expected that seventy or eighty will be added in the course of a few weeks.

Pictou Academy, N. S., has been selected as a station for the matriculation examination of the medical faculty of McGill University, for Nova Scotia. The examinations will be held on September 16th and 17th.

Lectures at the Dalhousie Law School were resumed September 7th, in the rooms of the Medical College. Three students from British Columbia were present. The new college building will not be ready for use till two or three weeks. A medical

faculty has been formed for Dalhousie. Lectures will soon begin in the building of the old Halifax Medical College.

The new Ladies' College, Halifax, opens on September 15th. Miss Leach, educated at Wellesley College, has received the appointment of Principal. Professor Porter has the management of the Conservatory of Music, while Herr Klengenfeldt will be instructor of the violin.

The Sheffield grammar school building, Sunbury Co., N. B., was destroyed by fire on Monday morning 5th inst., the work of incendiaries. The Upper Sheffield school house was also set on fire, but the flames were got out before much damage was done. Sneak thieves are said to have set the fires.—*Courier*.

We have just received the calendar of instruction of King's College, Windsor, N. S. It offers a number of valuable scholarships and prizes. It confers degrees in Arts, Divinity, Law, and Engineering. The calendar contains 112 pages, giving full information on all the subjects and organizations in connection with the University. The Michaelmas term begins October 1st. Matriculation examinations October 4th.

Mt. Allison University is the first among our higher institutions of learning to begin the collegiate year. It opened on Thursday the 1st of September. The year promises to be one of increased prosperity and efficiency to the Sackville institutions. Prof. W. M. Tweedie, M. A., of London University, has been added to the staff of the University, and his scholarship and excellent training will lend an additional value to the facilities for acquiring a liberal education at Mt. Allison.

The move of separating the model schools of the town from the Provincial Normal School will be beneficial to both. The Normal School will have the benefit of some one hundred pupils from the town, that will be formed into two or more departments in the Normal School building for the benefit of its pupil teachers, and the model schools will be relieved to that extent, besides the town will have the sole control of its own public schools at the trifling additional cost of \$500 per annum.—*Truro Sun*.

At Horton Landing, in the midst of the classic land of Evangeline, we recently had the pleasure of seeing Principal A. McNutt Patterson's Commercial and Agricultural school. The farm makes a magnificent display of fruits of all kinds. It gives no

small agricultural and horticultural instruction merely to visit the school with its surroundings. We are not surprised that the Seminary of Acacia Villa draws students from over the whole Province. No person knows better what a boy is and how to make a good-natured *man* of him than Principal Patterson.

SCIENTIFIC NOTES.

The Acadian, Wolfville, N. S., has, in its issue of September 2nd, a graphic description of a trip to the lakes forming the head waters of the Gaspereau River. The scientific allusions, which are full of interest, point to the facile pen of a Professor of Acadia College.

The New Star, Kentville, N. S., is having some fun at the expense of the provincial newspapers, which are solemnly reporting the discovery of a fossilized Indian foot ("even to the seams of the moccasin"), found in the carboniferous district of Hants County. It also regrets that the great Cape Breton carboniferous "*alligator*" has been blown to fragments by the profane blasters, leaving not enough dust to identify it.

The Morning Herald, Halifax, N. S., had a telegram from Pictou, August 23rd, repeating a rumor that a person who was miserable for some months was seized with a fit of vomiting, and ejected a live lizard two or three inches in length. And the story went the rounds of the press. We are in a position to state that the dimensions of the animal from which this rumor sprang was, when stretched, about five-sixteenths of an inch in length—a shade over a quarter of an inch—and that instead of being a lizard, it was probably the larva of *Musca Caesar*—the blue-bottle fly, or some allied species.

A correspondent in Queens County, N. B., writes to the REVIEW, stating that bears do not emerge from their winter quarters in the lean condition alleged in our text books (see McAdam's "Chemistry of Common Things"), but that they are fat, although they become lean a short time after being out. He cites the opinions of various bear hunters in York and Queens counties in proof of his assertion, and says that the tame bears owned by Mr. Hagerty at McAdam Junction actually became heavier during hibernation. Mr. Hagerty, in corroborating this statement says, however, that the term of hibernation was short, nine weeks, and that the bears are young and growing. He states his intention of letting them hibernate the coming winter, under more favorable conditions than last, and afterwards may have something bearing upon the subject to communicate.

The school children are excited over the discovery of a colony of *Halictus*, a burrowing bee. They burrow in thousands in a sand bank, going to a depth of from eight to twelve inches. The larvæ are found singly at the ends of these burrows, where they appear to be fed with pollen wax. It is probably *Halictus parallelus*, Say, and is a rather rare find.

Kentville, N. S., Sept. 5th.

In some of the schools the children are writing a description of the spinning of a cocoon by a caterpillar in the school-room. A most practical way of teaching English composition, and gaining knowledge and mental power at the same time.

Windsor, N. S., Sept. 1st.

A correspondent says: "To-day, 6th September, is very warm. I weighed a pan of ice at 9 a. m. and found it to be 4 pounds 6 ounces. Weighed it at 6 p. m. when the ice was nearly all converted to water, and found it to be 4 pounds 8 ounces. The weighing was accurate, and nothing visible was added to the contents of the pan. Account for the increase of weight." We leave it for our students of physics.

LITERARY NOTES.

The Herald, Toronto, July, republishes a portion of Principal MacKay's paper before the Nova Scotia Educational Association, 1885. It says, "A translation into French appeared in *Bulletin Mensuel*, for February. A Swedish translation has more recently appeared in *Nysta-earen*, which is the organ of the Swedish S. R. A."

D. C. HEATH & Co. have just published the following books, of especial interest to educators: Notes on the Early Training of Children. By Mrs. Frank Malleon. Third edition. A book for mothers and kindergartners. The English Language; its Grammar, History, and Literature. By Professor J. M. D. Meiklejohn, of the University of St. Andrews, Scotland. Meissner's German Grammar. Revised and rewritten by Professor Edward S. Joynes, of South Carolina College. Practical Lessons in the use of English. For Primary schools. By Mary F. Hyde, of the Normal school, Albany, N. Y. Industrial Instruction. By Robert Seidel. Translated by Margaret K. Smith, of the Oswego, N. Y., Normal school.

BOOKS AND EXCHANGES.

HOW TO TEACH NATURAL SCIENCE: This is No. XI. of the "School-room Classics" series, published by C. W. Bardeen, Syracuse, New York, at 15 cents each. Wm. T. Harris, LL.D., formerly Superintendent of Public Schools, St. Louis, Mo., is the author. It is a plan of study designed for these very progressive American schools, and has received considerable attention from the leading educationists of America, being made the basis of the report of the committee on Physics Teaching, presented at the meeting of the National Educational Association, Chicago, 1887.

KINDERGARTEN AND PRIMARY DRAWING COURSE: We have just seen Parts I. and II. of this course, which is published by Selby & Co., 33 Scott street, Toronto. It has been authorized by the Minister of Education for Ontario. We wish our leading educationists would examine this course without delay. We believe that they would unanimously recommend it, or something of the kind, in our primary schools. The copies are ruled in squares, and de-

signs are easily drawn in exact imitation of the originals. It thus cultivates the hand and the eye, and the simple designs are always more interesting than the monotonous stroke exercises by which children have generally been initiated into the mysteries of the art of writing.

The *Popular Science Monthly* for September has an article on Industrial Training two centuries ago, which shows that many important features of modern education were thought out in the past. . . . In the September *Century* there is an able editorial on a great teacher (Mark Hopkins), which is full of suggestions that teachers may profitably read. Here is one grain of wisdom: "It is the fatal tendency in teaching to shrink towards the capacity of those taught—a tendency that able teachers resist by constant watchfulness and severe studies." . . . *St. Nicholas* has for the past year been giving a series of sketches of great English schools, which are admirably illustrated and written. The September number contains an account of the famous Blue-coat school, whose boys were so strikingly portrayed by Charles Lamb. . . . The *Swiss Cross* continues to improve with each issue. The last number contains so many articles valuable to the young scientist, and written in such a fascinating style that we could wish that every boy and girl in this country had access to its pages. With the healthy tone of such magazines as this and *St. Nicholas*, there is hope that the tide of trashy literature that poisons and enervates the minds of so many youths may be stemmed and turned back. . . . *Science*, published by Science Company, New York, comes weekly with always something fresh and new, stimulating its many readers into fresh channels of thought and inquiry. Two suggestive articles to educationists are found in the number for September 2nd—"Original Research in the American College," and "The Function and Conduct of Examinations." . . . The *Journal of Pedagogy* is a new aspirant for the patronage of teachers. It is published at Athens, Ohio, and the initial number contains many admirable articles . . . Three educational publications that have strong claims for teachers' support are, *The Teachers' Institute*, the *School Journal*, and *Treasure Trove*, all published by that great firm of educational publishers, E. L. Kellogg & Co., New York. They aim to give practical assistance to teachers, and they succeed.

BOOKS RECEIVED.

THE EARTH IN SPACE: A manual of astronomical geography. By Edward P. Jackson, A. M. Boston: D. C. Heath & Co., Publishers.

S. P. C. A. WORK.

INTEREST OF HER MAJESTY THE QUEEN.

The notable circumstances and the very distinguished honor that Her Majesty the Queen has just paid this noble society by her personal attendance at its sixty-third annual meeting, has called forth much comment from the English press, and the theme of most of it goes to show that the Sovereign does not

attend meetings of other societies, and therefore her exceptional conduct in favor of this one must be regarded as indicating her deep interest and sympathy with the work.

Fifty-two years ago, as the Princess Victoria, she identified herself with its cause, and now while people from all parts of the civilized world are tendering their jubilee congratulations, this noble woman publicly before the world professes her membership, and thus shows her regard for God's dumb and dependent creatures.

The London *Daily News* thinks that by her visit to the Albert Hall immediately after the ceremony at the Imperial Institute, the Queen set the seal of royal approval upon the educational work carried on by the Ladies, Committee of the Royal S. P. C. A.; and goes on to state that between twenty and thirty thousand essays were sent in this year from the schools in all parts of London.

The *Daily Standard* in remarking upon the meeting says: "The Society for the Prevention of Cruelty to Animals has done enormous service, and its efforts have had no small share in the great transformation which has taken place in the national character with respect to the treatment of animals since it was founded."

The London *Daily Chronicle* also stated that nearly all the senior members of the royal family have at one time and another vouchsafed their personal support to the society. But it was reserved for the royal jubilee year for Her Majesty to come personally in contact with the Society and to give it such a gracious mark of her approval as to distribute the principal prizes to the student essayists of the Metropolitan schools. And not only so, but Her Majesty has since graciously presented her own photograph to each of the prize winners.

The following is Her Majesty's reply to the jubilee address presented by the Royal Society upon the occasion of its annual meeting. Its contents show that the most exalted position does not prevent Her Majesty from watching with the deepest interest even the treatment of inferior animals:

BUCKINGHAM PALACE,
June 19th, 1874.

My Dear Lord,—

The Queen has commanded me to address you as President of the Society for the Prevention of Cruelty to Animals, on the occasion of the assemblage in this country of the foreign delegates connected with similar associations, and of the interest in the success of the efforts which are being made here and abroad for the purpose of diminishing the cruelties practised on dumb animals. The Queen hears

and reads with horror of the sufferings which the brute creation often undergo from the thoughtlessness of the ignorant, and she fears also sometimes from experiments in the pursuit of science. For the removal of the former the Queen trusts much to the progress of education; and in regard to the pursuit of science, she hopes that the entire advantage of those anæsthetic discoveries from which man has derived so much benefit himself, in alleviation of suffering, may be fully extended to the lower animals. Her Majesty rejoices that the society awakens the interest of the young by the presentation of prizes for essays connected with the subject, and hears with gratification that her son and daughter-in-law show their interest and sympathy by presenting those prizes at your meeting. Her Majesty desires me to announce a donation of one hundred guineas towards the funds of the society.

I am, my dear Lord, very faithfully yours,

T. M. BIDDULPH.

The Earl of Harrowby, K. G.

The Ladies' Committee in charge of the Educational Branch of the New Brunswick Society's work, have had most encouraging results since the organization of the Band of Mercy movement in this Province, and are now taking further means to extend the work, by issuing the following circular, which has been sent to all the superintendents of Sunday schools and to most of the teachers in the public schools throughout the Province.

CIRCULAR.



The Ladies' Humane Educational Auxiliary of the New Brunswick Society for the Prevention of Cruelty to Animals having, by the kindness of Lord Aberdare, President of the Royal Society, had a second copy of the diploma of the Royal Society placed

at their disposal for presentation as a prize, have determined to dispose of it in the following manner, viz.:

The members of each Band of Mercy in connection with the N. B. S. P. C. A. are invited to write essays, consisting of the writer's "Personal Observations on the Habits and Treatment of Animals" for the year preceding the completion of his or her essay.

All essays written by the members of any Band are to be read and examined by a Committee appointed by the officers of the Band, and the essay

judged by such Committee to be the best is to be sent to the Secretary of the Ladies' Auxiliary on or before the 15th day of May, 1888.

The Ladies' Auxiliary will then decide which of the essays so sent in is the best, and at the Annual Meeting of the Bands of Mercy in June, a book prize will be given to the writer of each essay sent up to the Ladies' Auxiliary; a more valuable book to the writer of the best essay; and the diploma will be presented to the Band of Mercy of which the writer of the best essay is a member, with the name of the writer inscribed thereon.

F. MURRAY,
President.

F. M. SMITH,
Sec'y Ladies' Auxiliary S. P. C. A.,
Carleton Street, St. John.

SAINT JOHN, N. B., August 31st, 1887.

The Committee wish to draw the thoughtful attention of the teachers in the public schools, and superintendents of Sunday Schools of all denominations, to the great importance of this Band of Mercy movement, not only as a pleasurable means of interesting the young in the protection of God's dependent creatures, but as a means of inculcating principles of kindness, and thus preventing crime in after life.

Write for reading matter and book of information—"How to form a Band"—sent free of charge on application to Secretary of Auxiliary. *Form a Band in your School so that the children may compete for the prizes named, and for your reward depend upon it that these dumb and suffering servants of man (if they could speak) would bless you for doing so.*

TEACHERS' INSTITUTES.

York County Institute will meet at Fredericton on the 29th and 30th inst.

The Albert County Teachers' Institute will be held at Riverside, N. B., October 6th and 7th. An interesting programme is provided. Prof. Burwash will deliver an address.

The St. John County Teachers' Institute will assemble in this city on the last Thursday of October. A full programme will be published in our next issue. It is expected that the meeting will be an interesting one.

The second meeting of the Sackville Teachers' Association was held at Mt. Allison College on the last Saturday in August. Discussions on several important subjects of school work, with practical illustrations thereon, took place. Mr. Goodwin presided in the absence of Mr. E. B. Phelan,

Programme of the tenth annual meeting of Carleton County Teachers' Institute, to be held in Woodstock, September 22nd and 23rd, 1887:

First Session.—Thursday, 10 A. M. Enrolment of members; officers' reports; election of officers; appointment of standing committees; reception of visitors; discussion on developing ideas of pupils regarding the legislative functions of the Dominion, the Province, the County, the Parish and the School District.

Second Session.—Thursday, 2 P. M. Discussion on teaching arithmetic in primary and intermediate grades, opened by J. T. Horsman, A. B.; reports of work done Arbor Day; question box.

Third Session.—Friday, 9.30 A. M. Reports from Provincial and County Institutes received; classification of ungraded schools, opened by W. T. Kerr; difficulties in teaching spelling, opened by Louis Young; question box.

Fourth Session.—Friday, 2 P. M. How physics can be easily taught in common schools; lesson on color.

The Westmorland County Teachers' Institute will hold its next annual meeting at Moncton on the 15th and 16th September, 1887. The programme is as follows:—

First Session.—Thursday, 10 A. M. Enrolment of members, reports and election of officers.

Second Session.—Thursday, 2 P. M. Subjects:—"Practical Education," "Teachers' History."

Third Session.—Friday, 9 A. M. Subjects:—"What constitutes the Successful Teacher?" "Industrial Education."

Fourth Session.—Friday, 2 P. M. Subjects:—"The Teacher out of School;" "What and Why."

It is hoped that the teachers generally will bring specimens of work done by their schools in arithmetic, drawing, map-drawing, letter-writing and book-keeping. Teachers are also invited to add to the interest of the exhibit by contributing collections of natural objects.

Mr. S. C. Wilbur, Principal of the Moncton schools, has tendered the hospitalities of the town to the members of the Institute, and has kindly offered to make the necessary arrangements for their accommodation.

JOHN BRITAIN,
Sec'y-Treasurer.

GEO. J. OULTON,
President.

The ninth annual meeting of the Charlotte County Teachers' Institute will be held at St. Stephen, on Thursday and Friday, the 29th and 30th September, 1887. The following programme has been arranged by the Committee of Management:

First Session.—Thursday, 10 A. M. Routine; enrolment of members; election of officers, &c. Paper: Animal Life, Inspector Carter; followed by discussion.

Second Session.—Thursday, 2 P. M. Paper: Writing as required in the first six standards of graded schools, F. O. Sullivan; followed by discussion. Temperance as required in our Common Schools, Mr. John Lawson; discussion opened by Mr. Geo. M. Johnston.

Third Session.—Thursday, 7.30 P. M. Public Meeting: Addresses by Superintendent of Education, Rev. G. M. Campbell and Mr. George J. Clark.

Fourth Session.—Friday, 9 A. M. Papers: What should the Teacher read outside of ordinary School Work, with a view to General Culture, Mr. P. G. McFarlane; discussion opened by Mr. Wm. Brodie. Mental Arithmetic, Mr. James W. Campbell; followed by discussion.

Fifth Session.—Friday, 2 P. M. Paper: How to Teach History, Mr. James Vroom; discussion opened by Miss Addie Hanson. Determining time and place of next meeting, &c.

All persons interested in education are cordially invited to attend.

Certificates for free return fare by N. B. and G. S. Ry's, steamers *Flushing* and *Charles Houghton*, will be issued to those who enroll themselves as members of the Institute.

T. A. HARTT,
Sec'y-Treasurer.

F. O. SULLIVAN,
President.

[OFFICIAL.]

RUDDIMAN JOHNSTON & CO'S MAPS.

The Board of Education has been pleased to prescribe for the use of schools, Ruddiman Johnston's map of the Dominion of Canada, and map of geographical terms—the former to be used at the option of trustees in place of the map published by the Canada Publishing Co., and the latter to be used in all rural schools, and in primary grades in cities and towns.

The map of the Dominion—2 ft. 8 in. by 1 ft. 10 in.—is admirably adapted for the use of rural schools and younger classes in cities and towns. Its divisions are definitely and distinctly outlined, and the physical features of the country, such as rivers and mountains, etc., are boldly and clearly delineated.

The map of geographical terms will be found specially useful as an aid to correct conceptions of terms often misunderstood from want of illustration. It will also prove a useful ornament to most school-rooms.

The maps, mounted on rollers and varnished, are on sale at the several bookstores at \$1.00 each.

WM. CROCKET,
Chief Sup't Education.

Education Office,
Fredericton, N. B., Sept. 1st, 1887.

UNIVERSITY OF KING'S COLLEGE,
WINDSOR, N. S.

Michaelmas Term opens Oct. 1, 1887,
Matriculation Examinations begin Oct. 4,
The Calendar for 1887-88 ready Aug. 24.

Apply to the Reverend the President,

King's College, Windsor, N. S.

UNIVERSITY OF NEW BRUNSWICK.

MICHAELMAS TERM, 1887.

University Supplemental Examinations begin Sept. 22nd.
Lectures for Senior and Junior Classes begin Sept. 26th.
Examinations for Matriculation and for County Scholarships begin Oct. 1st.

The Scholarships for the Counties of Restigouche, Gloucester, Kent, Westmorland, St. John, Queens,
Sunbury and York are now vacant.

Calendars sent on application to

J. D. HAZEN,
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