

The Educational Review.

Devoted to Advanced Methods of Education and General Culture.

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EDITORIAL NOTES.

THURSDAY, Nov. 17th, has been set apart by the Dominion Government as a day of Thanksgiving, and will, therefore, be a school holiday.

SIR WM. DAWSON, who has given McGill University a world-wide fame, addressed a large convention of teachers the other day at Huntingdon, Quebec. Sir William was the pioneer reformer of Nova Scotian education. The hope has been expressed that these provinces may have the good fortune to enjoy his presence at one of our own conventions.

THE *Evening Mercury*, St. John's, Newfoundland, pays a very praiseworthy attention to the education of the Island. In that respect, it is ahead of many of our leading continental newspapers. It concludes a two-column article in one issue in these words: "The natural history of the Island should also be taught (in the public schools), and now that we have a museum of a creditable character, how interesting

and instructive might visits of pupils to that institution be made if they were accompanied by a teacher; and what an impulse and pleasure thus given to the study of the geology, mineralogy, zoology, etc., of the land we live in!"

THE N. B. Natural History Society is about to open its rooms and museum to teachers and others in St. John and vicinity who may wish to take a course of elementary lectures in natural science, conducted somewhat after the methods of the Summer School. The lectures and use of the museum are free to all who join the Society. Further particulars, with the subjects and lectures, will be announced soon.

FOR variety of contents and usefulness we believe this number, which completes the first half year of the REVIEW, will compare favorably with any of its predecessors. The article on the constellations, which has been illustrated by Mr. Flewwelling, will, we hope, give fresh interest to the study of the stars, which at this season present such facilities for observation. These illustrations will be continued in future numbers of the REVIEW.

DURING the past month Teachers' Institutes have been held in Gloucester, Northumberland, Albert, and St. John. We have full reports of these meetings, but to do justice to them would take up more space than we can at present command. Besides, the local papers have given full reports of the proceedings. We should like to give, in future issues of the REVIEW, the substance of important papers, and emphasize material points brought out in the discussions at these Institutes. We have on hand, but are compelled to hold over till next issue, the substance of the addresses of Mr. Parkin at the York County Institute, and Inspector Oakes at the Carleton Institute on "Teaching the Principles of Civil Government." We have noticed other excellent papers which we are sure would be of general interest outside of the gatherings before which they were read. Contributors must bear in mind a former request—to be brief and to the point. Only in that way can we serve the interests of our patrons.

VOLAPUK—from *vola*, "of the world; *puk*, language—is a scientific international language. It is not intended to supersede any living language, but to be learned next the mother language by every educated person. It is formed on the general model of the Aryan families of languages, selecting from each the true and beautiful, while discarding irregularities, oddities and difficulties. Its material is largely taken from the English, but its structure—noun-declension, and verb-conjugation—is rather un-English as are two or three of its vowels. It is far easier to learn than any existing language, and has already made rapid progress in twenty or thirty European and Asiatic languages. It is to be tried by a small class in the Pictou Academy this winter. The grammar is expected to be fully mastered before the Christmas vacation. The text-book, is "Seret's Grammar with Vocabulary of Volapuk," 420 pages, published in Glasgow, by Thomas Murray & Son, and in London, by Whittaker & Co. At a Congress of Volapuk scholars in Munich this year, a Volapuk Academy has been formed. The next meeting of the congress is in Paris, 1889. After considering all, we believe that were English orthography corrected to agree with its orthoepy (and they should never have been allowed to drift asunder), the English language might, with greater advantage to all concerned, be adopted as the international or universal tongue.

OVER-PRESSURE IN SCHOOLS.

During the past few years the question of over-pressure has, perhaps, more than any other, been urged upon the attention of school-boards and educational administrators. Eminent physicians and educationists have discussed it in the journals of the day, while teachers, in their magazines and at conventions, have not been slow to express their views. Committees have been appointed to investigate the matter and suggest remedies, and have presented elaborate reports which have been listened to and read with satisfaction, and whose proposals to meet the evil have been commended as eminently wise and practical. And yet on every side we still hear the same cry of over-pressure, perhaps louder and more frequent than before. And why is this the case? Why is it that though so much has been uttered and written on the subject, so little has been done? Does the cry rest on a basis of fact, or is it a delusion? Are all these letters and speeches merely the spasmodic productions of nervous people and busy-bodies; or are they the genuine outcome of philanthropic zeal and an intelligent interest in the cause of education?

As we understand the question, there is much misapprehension of its import by many of those who

have entered upon its discussion. The non-professional disputants, and, we fear, many of those engaged in teaching, fail to distinguish between the healthful pressure exerted by an enthusiastic teacher who is governed by a reasonable curriculum, and the pernicious urgency which generally accompanies a course of studies preposterous in its variety and extent. And therefore it happens that the best teachers deny the existence of over-pressure, while medical men denounce our educational fervor and declare that we are doing more harm than good. The former allege that the break down of many a promising pupil is attributable to other causes and not to excessive application to their lessons; but the latter see in school work the apparent cause of collapse: to that they unhesitatingly refer it and condemn it accordingly.

The position of the teacher in relation to the question is also complicated by the attitude assumed by the parents of his pupils. They are often unreasonably anxious for the advancement of their children from grade to grade, and that irrespective of mental capacity and physical strength. But if they expect them to be promoted they must first secure the necessary marks indicative of progress, and must accordingly perform a fair share of hard work. The character of the parent (so he imagines) is to some extent at stake in the pass or failure of his child: pressure is put upon the teacher and the teacher stimulates his pupil.

This interest, however, evinced by the parent in the progress of his children, is not unfrequently of great service to the teacher, by securing regularity of attendance and some attention to home preparation. And if the school programme be of possible dimensions the conditions are favorable to successful work. Nor need there be any fear lest dangerous results ensue from earnest and diligent application under the direction of a teacher who possesses prudence as well as zeal; a clear intelligence, as well as a sympathetic soul. We must affirm that under these circumstances we have never seen boy or girl injured by diligent study. But we have known of boys and girls being sent to school who ought rather to have been in the open air enjoying the sunshine and the breath of heaven: youths in whom the seeds of disease were already present, which only required the confinement and other conditions of the school-room for germination and growth. It unfortunately happens that sometimes delicate children display an abnormal brilliancy, and are encouraged to greater effort when they ought undoubtedly to moderate their application and spend most of their time in an atmosphere and in occupation favorable to health. A natural tendency disease, bad air, insufficient or improperly cooked

food, want of cleanliness and restricted exercise are the fruitful causes of disease and death among children attending school, but excessive study, we may say, never. We have yet to learn that teachers meet with such a ready response to their demand for home preparation that they feel impelled from motives of humanity to advise their pupils to moderate their ardor. Boys have a remarkable faculty of taking care of themselves in this respect, and we think that it is likely to continue in vigorous exercise as long as there are boys. With girls it may be different. Their temperament is more nervous, they are not so strong and robust and not so capable of long continued exertion, and therefore, for them, a more limited curriculum should be prescribed. But we think that most teachers will agree with us when we say that though girls are perhaps more conscientious than boys, they are equally well endowed with the instinct of self-preservation.

We are convinced that the foolish and often frantic call for indiscriminate interference on behalf of pupils is for the most part groundless. The boys, and the girls too, must laugh at a great deal that is said about mitigating their deplorable condition. Many of the evils from which they are said to suffer they hear of for the first time from the fervid utterances of humanitarian physicians and amateur philanthropists. They must wonder what it all means, but must have some faint notion that the school-boy millennium is at hand. Fortunately, however, if they are led to indulge in day-dreams of a time when there shall be no more lessons, no more themes, they are soon recalled to the realities of the present by the inspiring summons of their teacher to fresh and more vigorous and more strenuous effort. And the more intense their application to their studies the more satisfactory are the results, and the keener their enjoyment of times of relaxation when they occur.

We have had ample opportunity during many years to observe the effect of study upon most diligent students of both sexes, and can confidently aver that it is a most healthful occupation. In the course of a quarter of a century not one death has been recorded nor one instance of injury arising from an over-zealous prosecution of study.

But if the school curriculum be of such dimensions that its subjects, in number and range, are beyond the powers of the average pupil, and the time which the various subjects demand passes the limits of prudence, and curtails that which is required for amusement and exercise, it cannot be too strongly condemned. The chairman of the London (England) School Board, in his annual address, delivered a week or two ago, says: "The great danger which apparently

threatens the steady progress of elementary education is the pressure which is constantly being exerted to render obligatory additional subjects of instruction, without reference to the varying circumstances of the children, or the settled conditions of elementary school life. We are in danger of destroying the efficiency of elementary education by attempting to teach a little of many things, instead of teaching what it is practicable to teach thoroughly and well." And this danger, of which Rev. Mr. Diggle warned his colleagues, is one which we fear threatens us too. The time-table is becoming so crowded with subjects that it is absolutely impossible to find time for them all. Distraction instead of interest ensues. The pupil in his home work does not aim at understanding his lessons but merely memorizes, while in school the time is so broken up into fragments that it is only possible to test his preparation, without securing his sympathy or calling into exercise his thinking powers. For the duty of the teacher is not confined to the communication of knowledge, but he must see that it is understood, and that the mind of the pupil is so disciplined that he will be able to acquire knowledge for himself. If the time-table does not admit of this, then it is bad and ought to be rectified. In the hurry and mental confusion arising from a multiplicity of subjects the pupil has no time to think, the intellectual atmosphere of such a school is not favorable to thought, there is cram throughout—drill if you wish to call it, but certainly it is not education. Hand-books or primers of all the sciences are in the hands of the pupils, and crammed, and often so unintelligently that they do not even understand the language employed. Worry and bewilderment are the result to diligent pupils, and often nervous collapse. If this is the evil complained of as over-pressure, there is not an intelligent teacher in the land but will heartily sympathize with the hostile criticism with which it is assailed, and cordially cooperate in any earnest attempt to banish it from our schools.

THE NEWFOUNDLAND SCHOOL SYSTEM.

The letter of "L. G. M.," in another column, will be read with interest. As the subject has been pretty thoroughly discussed, and both sides have had a fair hearing, we feel that the interests of our readers have been fully served by what has thus far appeared in these columns. We hope, therefore, that the letter which appears to-day will close the discussion, so far as this paper is concerned.

In inviting to our columns in June last an article on the present system of education in Newfoundland, we were actuated with one desire only—to obtain and

lay before our readers for their information some account of the school system of that Province and its workings. Although the views of the gentleman who kindly acceded to our request were presented with considerable keenness and vigor, they were considered, on the whole, as a fair statement of the Island's educational affairs. From private information that we have since had from residents of St. John's, these views met with considerable favor. We are ready to admit, however, that our own view of the case is derived from an experience of the excellent results that proceed from the workings of the free, undenominational system that prevails in our midst. With the results of such a system before us—a system that confers the greatest good upon the greatest number, which secures the best results with the least expenditure, we may be pardoned for not seeing the advantages which the advocates of a separate system claim for it, and to again express the hope that Newfoundland may before long cast off the present cumbrous system and adopt a system which is best judged by its results.

THE N. S. NORMAL SCHOOL.

This institution was formally opened on Wednesday last. On that day 125 students presented themselves for admission to the various classes. But as three following days, Thursday, Friday and Monday, were allowed to students to present themselves, this number, it was expected, would be largely increased. The usual number in attendance during recent years has been from 150 to 200, and this year the number is not likely to be much less, notwithstanding the recent elevation of standards of admission to the several classes. It may not be generally known that attendance at the N. S. Normal School is entirely voluntary, and that its graduates have no legal advantages in the profession over those who obtain their license after private study or a course at other institutions. This fact speaks volumes, not only for the large number who annually present themselves to partake of the advantages of the special training which the institution affords, but also for the splendid equipment and the excellent faculty which prepare student teachers for their work. We congratulate the faculty and students of this institution for the fine prospect of usefulness before them on entering upon a new year; and the substantial advantages that must result to the whole Province from work which, to judge from the past, has been so conscientiously and intelligently performed, can scarcely be estimated.

There has been added to an already well equipped museum a fine collection of Nova Scotian birds mounted by Mr. Walter Bishop of Kentville.

THE WINTER TERM.

"While opinions may honestly differ as to the most expedient calendar for our school year, all must admit that so long as the seasons and the general pursuits of the people retain their present order and character, the time covered by the winter term is to the older classes of our youth—particularly to the older boys—the most valuable part of the year, as affording them their most advantageous period of study. Indeed, to many it is *either this or nothing*. How important then that the opportunity be afforded for gathering in the largest possible results from these winter months of study! How utterly inexcusable and shameful the conduct of trustees, who by inattention to such little matters as doors, and windows, and floors, and stoves, and fuel, do their best to cheat the youth of their section out of their educational birthright! Such cases may be rare, yet the Inspectors' Monthly Report shows that they do occur. But let us limit ourselves more precisely to the past and say that they *have occurred*, while we express the hope that they *will never occur again*. By all means, trustees, get your school premises in good order for a good winter's work."—*N. S. Journal of Education*.

The above will commend itself to every one who wishes to see the youth of the country get a fair common school education. The winter certainly is the golden season for improvement, and the neglect to provide instruction, especially for the larger children of a district during that season, is a great injustice to them. Carelessness and indifference on the part of school trustees in regard to keeping schools open during the winter season is not peculiar to one Province. It is, unfortunately, too common. There are several districts not far from St. John in which it is the intention, we hear, to close the schools for the coming winter. If this be done it will be a great injustice to the children in these districts, and we hope the trustees may fully consider the results of such carelessness and indifference on their part, especially as the rate-payers in the districts referred to are sufficiently numerous and influential to keep well equipped schools in operation all the year. The one remedy for such a state of things is compulsory education.

THE P. E. I. CONVENTION.

The eighth annual meeting of the Teachers' Provincial Institute, of Prince Edward Island, was held at Charlottetown on 6th and 7th October. The number of members enrolled, 174, was greater than on any previous occasion; the attendance at all the sessions was large, and a more than ordinary degree of interest was manifested by the teachers in its proceedings. The papers which were read were upon the whole practical, and some of them bore evidence of careful preparation and much thought; while the

discussions which were evoked by the opinions advanced by the essayists were conducted with spirit, good sense, and intelligence.

The first paper was on arithmetic, by Mr. William Cain, Inspector for the eastern district of the Province, in which he advocated more thorough drill in the elementary rules, and more general practice in mental arithmetic. He manifestly secured the sympathy of his audience, and judging from the hearty commendations of his suggestions expressed on every side, he should not experience any difficulty in giving practical effect to them.

During the same session a very thoughtful essay on "The Primary Department" was read by Miss McPhail, Summerside. Miss McPhail's great success as a primary teacher was in itself a guarantee that her paper would not consist of vain theorizings, but proceed from the fulness of her experience, and won for her an amount of respectful attention rarely accorded to one who discourses on that department of professional work.

On the motion of the Chief Superintendent a resolution was unanimously adopted to appoint a committee to confer with similar committees from New Brunswick and Nova Scotia respecting the holding, next year, of an interprovincial Convention. The Chief Superintendent, Principal Anderson, Messrs. Seaman, McLeod and McSwain, were selected to serve on that committee.

It was also proposed, and heartily agreed to, "That this convention cordially recommend the EDUCATIONAL REVIEW, the organ of the teachers of the Lower Provinces, to the support of the members of the profession in this Province."

A lesson in English to a class of girls belonging to the Upper Prince Street school, by Mr. LePage of the Prince of Wales College, was a pleasant and interesting feature of the afternoon session, while the annual discussion on "Summer holidays, versus holidays Spring and Fall," and that on the proposal to dispense with the meeting of the Provincial Convention, next year, showed that both were subjects of great importance to teachers. The Institute again recorded its conviction of the necessity of a change in the holiday-time for country districts to mid-summer, and determined by a considerable majority to hold its annual meeting next year notwithstanding the assembling of teachers in Interprovincial Convention.

A public meeting was held in the evening in the Hall of the Upper Prince Street school, presided over by Mr. W. E. Dawson, chairman of the City School Board, and its signal success was in no small degree owing to the firmness and ability with which he discharged his duties. The programme comprised

addresses, readings, and songs, and all were of more than ordinary merit. The speakers were Rev. Mr. Whitman, Hon. L. H. Davies, Superintendent Montgomery, Principal Anderson and Mr. Gallant. The reverend gentleman spoke with ability, eloquence and sympathy of the importance and nobility of the teacher's profession, whilst the others, by remarks instructive and entertaining, secured to the end the attention of the crowded audience. Mr. LePage read an excellent essay on culture, and the readings of Misses Lawson, Wade and Gunn were rendered with great feeling and power. The music was much appreciated—the songs by Miss Scott and Mr. Gallant, and the violin solo by Mr. Macdougall, particularly so; and too much praise cannot be accorded to Miss Barr and her assistants of the Upper Prince Street school, for the excellent class-singing of nearly 300 of her pupils, and the admirable order maintained by them throughout the evening.

On Friday a very useful paper on "Writing" was read by Mr. McDonald, New Glasgow, and elicited a spirited discussion, and as all the remarks and suggestions were of a practical character, and were offered by gentlemen who understood and were interested in the subject—Messrs. D. J. McLeod, Prince of Wales College, Inspector Arbuckle, Stewart, Georgetown, and Principal Anderson—the result ought to be very satisfactory.

A most valuable contribution to the transactions of the Institute was the article on "School Hygiene" by Dr. Richard Johnson, health officer of Charlottetown, and formerly a member of the School Board. It was not only well and forcibly written, characterized throughout by sobriety of judgment and clearness of exposition, but singularly free from professional narrowness and dogmatism. It was listened to with close attention and keen appreciation, and a hearty vote of thanks was returned to the Doctor for the pleasure and profit which all had enjoyed. His audience regretted that it could not be read in the hearing of every Board of School Trustees in the Province, but unanimously resolved to print it and a selection from the papers of the last three years, and circulate them as widely as possible.

Later in the afternoon Mr. Joseph Roach, Souris, in criticising the "Course of Studies," recommended the elimination from it of the advanced subjects, such as Latin and mathematics; while Mr. Henry Green, St. Peter's Boys' School, Charlottetown, in an essay upon "Education in English Board Schools," suggested the adoption of the English system in Prince Edward Island in preference to that which is operative under the present school law. Principal Anderson, the Chief Superintendent, and Mr. N. McLeod, Sum

merside, maintained the supreme value of our system—that under it the poor as well as the rich, to an equal degree, and at little cost, enjoy the advantage of the best education that the Province affords.

Thereafter the officers for the ensuing year were chosen: President, Principal Anderson; Vice-presidents, Inspectors Arbuckle and Cain, and Mr. John McSwain; Secretary-Treasurer, Mr. D. J. McLeod; Corresponding Secretary, Miss Alice Fennessey; Executive Committee, Messrs. Ewen Stewart, Neil McLeod, Herbert Shaw, George E. Robinson, Charles Kielly, Domitian Gallant and Miss E. E. McKinnon.

After Mr. Seaman had vacated the chair, and his successor had assumed the duties of the presidency, and thanks had been tendered to Messrs. Seaman, Robinson, and their colleagues for their services, the following gentlemen were elected honorary members of the Teachers' Institute in recognition of their interest in the work of education: James McLeod, M. D., Richard Johnson, M. D., Rev. W. R. Frame, and Messrs. L. H. Davies, M. P., David Laird, P. C., T. Handrahan, W. G. Strong, J. G. Underhay, W. E. Dawson and Henry Lawson. Rev. W. R. Frame returned thanks in felicitous terms for the honor which had been conferred upon him.

In the evening the teachers of Charlottetown entertained their friends from the country with music—vocal and instrumental, recitations, refreshments, etc., and after singing Auld Lang Syne and God Save the Queen, the Convention of 1887 was closed, and all retired with the conviction that it was the pleasantest and most profitable of teachers' gatherings ever held in Charlottetown.

WHAT CONSTITUTES SUCCESSFUL TEACHING?

In a recent address upon this subject to the teachers of Westmorland County, Inspector Smith outlined the following points which are worthy the careful attention of every instructor.

(1) A teacher should have a good mental outfit. He should be well informed, and to his stock of information there should be daily additions from varied sources. He should especially read books and papers devoted to educational work. Better read too much than too little.

(2) Discipline in a school must be maintained at any cost. The teacher must be master in the school-room. Theoretically, the speaker was opposed to corporal punishment; practically, he did not express a positive opinion. But the teacher must control the school.

(3) The teacher must be persistent in exacting thorough work. A careless oversight on the part of the teacher does not tend to exactness on the part of the pupil. Vigilance should not be relaxed, nor what are termed small things be overlooked.

(4) All mathematical problems, however simple, solved by the pupils, should be explained by them, that the teacher may be assured the problems are thoroughly understood.

(5) The teacher should avoid telling the pupils too much when questioning them. They should be compelled to depend upon their own ingenuity and draw upon their own resources as much as possible. It is thus they receive benefit, and grow in mental power.

(6) In giving directions to his pupils with regard to work to be done, the teacher should not find it necessary to repeat. The pupils should be disciplined in the matter of giving quick and intelligent attention to every remark made to them by the teacher. So valuable time is saved and a good habit cultivated.

(7) Very long lessons should not be assigned. Better too short than too long. When very long, the preparation cannot be thorough. Parents are largely to blame for the fault of long lessons. Too many of them have the idea that getting through a book is equivalent to mastering its contents. But the teacher should go slow enough to do thorough work.

(8) In questioning pupils, the teacher should be patient. Give them time to comprehend the question in every instance. Put it in a different form only when assured that the first cannot be understood. The art of questioning is a somewhat difficult one to acquire, but is of very great importance. A question may suggest the answer, or it may be so obscure as to confuse the pupil. The former error is most common and should be especially guarded against.

(9) A teacher should not talk too much in the school-room. He should not talk much about discipline, and the children should do most of the talking about the lessons. He should also be very judicious in according praise or blame. Compliments should not become cheap, nor should censure be too harsh.

N. S. SUMMER SCIENCE SCHOOL.

The following has been suggested in continuation of the suggestions made in our September number, page 68, as requirements for first year certificates in the N. S. Summer School of Science:

CHEMISTRY—(300 marks).

- (a) Examination in text of Chem. Primer; 100 marks.
- (b) Demonstration by experiment of laws and properties as in Chem. Primer; 100 marks.
- (c) Collection of home-made apparatus for teaching Chemistry as in Primer; 100 marks.

PHYSICS—(300 marks).

- (a) Examination in Gage's Physics, chap. i., ii. and iii.; 100 marks.
- (b) Demonstration; by experiments in the same; 100 marks.
- (c) Collection of home-made apparatus for teaching same work; 100 marks.

These suggestions have not yet come before the committee for consideration, but they indicate the probable complexion of the work. There may be some modification in the staff of instruction before the programme of next year's work is announced.

FERNDALE SCHOOL.

No. VI. PAPILIO TURNUS. *Linn, etc.*

T. You know this butterfly?

S. Yes; it is the "swallow-tail." They were very common last summer in June and July. It has knobbed antennæ; therefore it is a true butterfly.

T. Very good. It is sometimes called the "*turnus* swallow-tail," to distinguish it from other swallow-tailed butterflies which are not so common here. In fact it is *the* butterfly, as it receives the Latin name *papilio*, which meant "butterfly" with the old Romans. Do you know any word derived from *papilio*?

JACK. Yes; you said the pea blossom was sometimes called a *papilionaceous* flower because it looked like a butterfly—*papilio*.

ANOTHER S. I saw a fellow who pinned one on his hat last spring, when he was out in the woods, and it was still moving its wings when he came home in the evening.

T. Was he collecting butterflies?

S. No; only for fun.

T. Would you stick a pin through the body of a living butterfly?

S. No, because it would be cruel. You told us always to kill the insect first in the most painless way. It would be very cruel to allow a living insect to struggle on a pin.

T. How do you kill them?

S. I just put a drop of chloroform or gasoline from a little phial on their bodies, and they become instantly quiet and dead.

T. What would you do if you caught a specimen and had not your phial with you?

JACK. I would quickly and firmly squeeze the thorax or breast of the insect, beneath its wings, which instantly kills it. I could then pin it, and spread out its wings to dry the way I wanted.

T. You are right. No true naturalist can cause unnecessary pain, even to an insect or a reptile, although we have good reason to believe that they are not so sensitive to pain as the higher animals.

S. But it is necessary to kill some insects and animals, or else they might be the cause of the death

of men and women from starvation. They would eat up and destroy the crops which we grow.

T. True. You can tell me then, I suppose, what you think is the use of having lessons in school on insects. I just want to know what you think of it.

S. Because we are gaining knowledge. That is what you say we study history for.

ANOTHER S. I think it is more useful than history. What is the use of knowing about Henry VIII. or Julius Cæsar? I would have liked them better if I never knew anything about them.

ANOTHER. And you'll never meet Henry VIII. or Julius Cæsar either; but you will meet insects every day.

T. I see you are all naturalists. You can understand insects now very well. But when you grow a little older you will also see that we can obtain some good from knowing the character of men who have lived, and the effects of their character on the world.

But for young people I think you are right in trying to know what you can understand. And then, again, as some of you suggested, the subject is a very practical one.

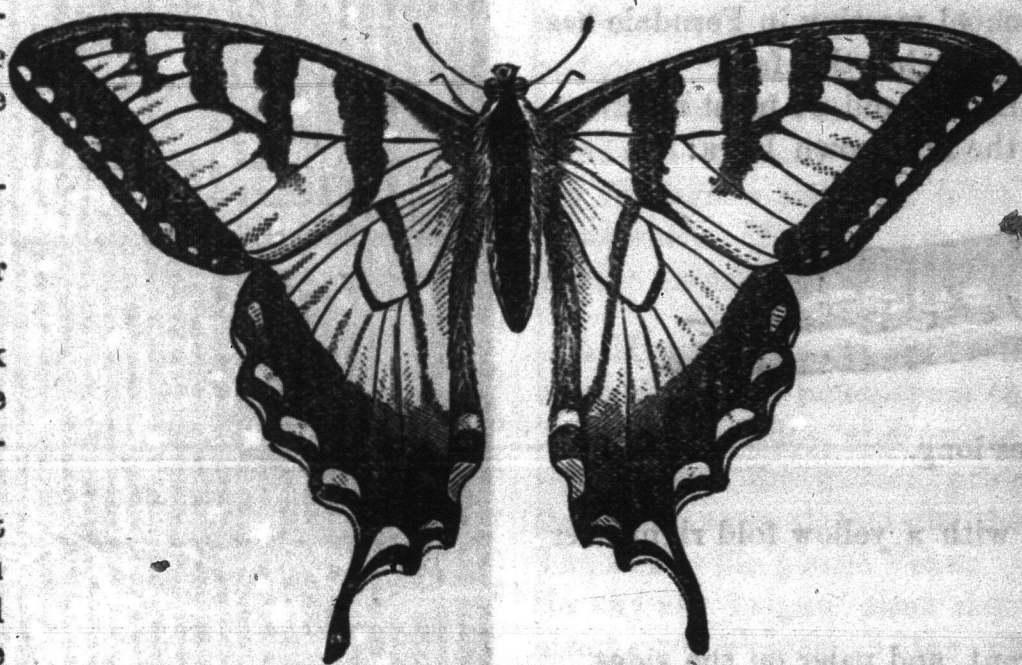
S. Yes; because if people knew all about insects they would know how to try to stop their mischief. I wonder how much mischief is done by them?

T. That is just what I was wanting you to come to. The United States has now a very able entomologist, with a number of salaried assistants, whose business is to study the insects of the country, and report to the government, which publishes the information for the use of their people. And in addition to this, many of the several States have entomologists of their own. A great deal more than \$100,000 is spent in this work alone.

S. And does it pay?

T. Yes. For it was estimated when this work was begun that \$200,000,000 (two hundred million dollars) worth of produce was destroyed each year in the United States by insects; and of this from \$50,000,000 to \$100,000,000 should be saved, it was estimated, by a popular knowledge of insects and the best manner of treating them. How many \$100,000 are in \$100,000,000?

S. 1,000.

PAPILIO TURNUS. *Linn.*

T. That is, they expect a dollar's worth of knowledge to save one thousand dollars' worth of produce?

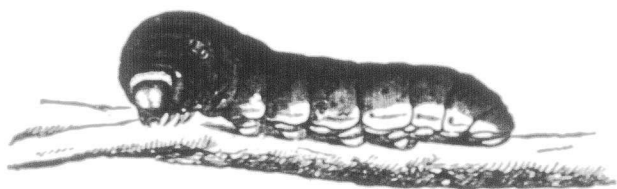
S. Have they a government entomologist in England?

T. They have.

S. In Canada?

T. They have, and an excellent naturalist, James Fletcher. He estimates the loss in Canada as equal to one-fifth all the crops produced. Just think of all the apples, and plums, potatoes, wheat, oats and other articles raised each year in Nova Scotia, New Brunswick, and Prince Edward Island—one-fifth of the whole destroyed by insects of one kind or another. This one-fifth, if saved, would be clear gain to our producers. Sometimes, of course, it is one crop, and sometimes another that is chiefly attacked. You can see now that a knowledge of insects is of much more importance in our country school sections than many other things taught. And this is one reason, I suppose, why the annual school meeting in Ferndale has been so generous to your teacher this fall.

But our time is nearly up, and we must return to our butterfly. Here is the full grown larva:



How long?

S. Nearly two inches long.

T. Its head is—

S. Reddish brown, with a yellow fold right over its head.

T. Body—

S. Dark green in front, and paler on the sides.

T. On each side of the third segment is—

S. A kind of an eye spot, nearly oval; yellow, circled with black, and centred with a blue dash, edged with black.

T. In the fourth segment there is—

S. A raised yellow fold, edged with black, and one something like it on the last segment.

T. On the fifth segment?

S. There are two blue dots—one on each side.

T. This caterpillar was hatched from small eggs about the twentieth part of an inch in diameter. They were placed singly on the leaves of the trees on which the larva feeds. It is now ready to pass into the chrysalis state. It will bind its lower part by fine silk threads to the under side of some support, and then spin a delicate silken band or loop, tying its upper portion to the support. Its dull, brown chrysalis case thus tied up is an interesting object. On what have you observed the caterpillar to feed?

S. On apple trees, cherry trees, thorn hedge leaves and some other plants.

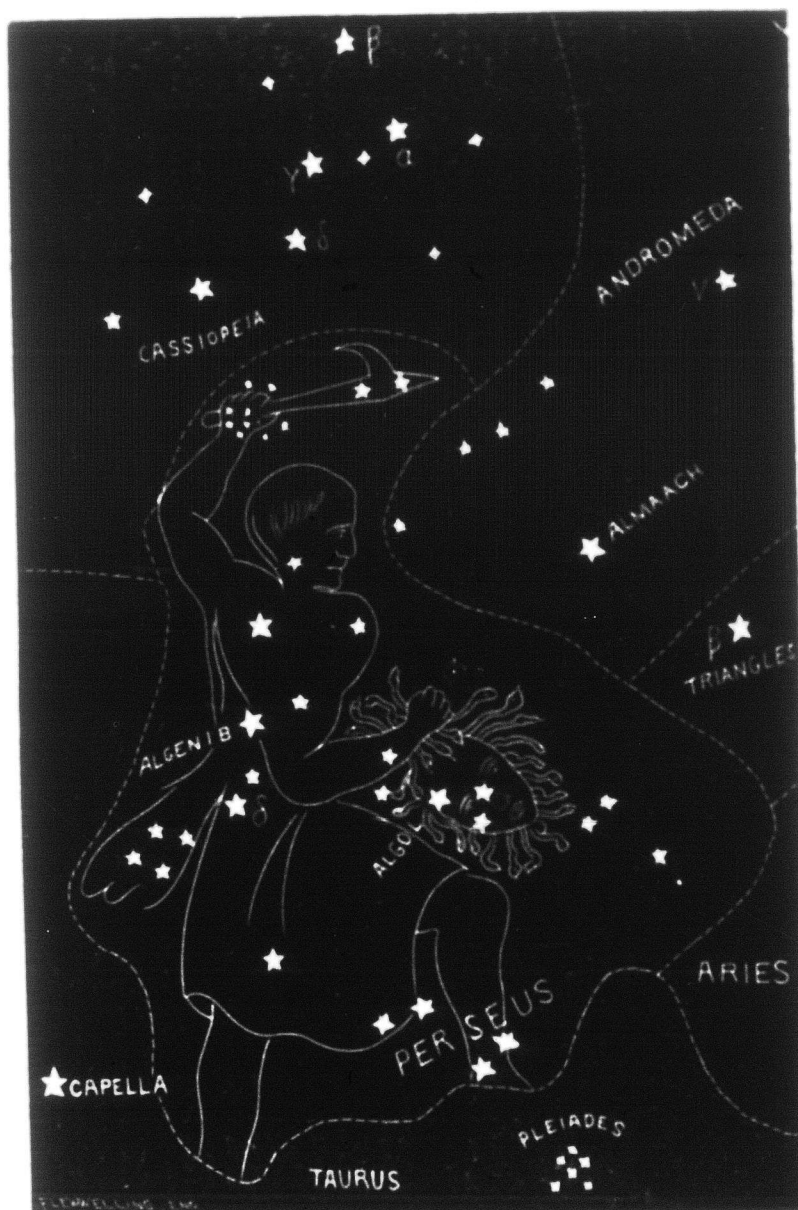
T. Very good. In next lesson I will probably give you an outline of the classification of insects, with figures illustrating the orders.

AMONG THE CONSTELLATIONS.

NO. III.—PERSEUS AND THE DEMON STAR.

“Perseus next

Brandishes high in heaven his sword of flame,
And holds triumphant the dire Gorgon's head,
Flashing with fiery snakes! The stars he counts
Are sixty-seven; and two of these he boasts
Nobly refulgent in the second rank—
One in his vest, one in Medusa's head.”



This is the constellation Perseus. The mythical hero is represented as having one foot in the stars, directed towards the Pleiades in *Taurus* the Bull, and the other nearly towards Capella in *Auriga* the charioteer. *Delta* is on his body, *Alpha* (Algenib) on his breast, *Gamma* on his right shoulder, whose up-lifted arm bears a sword with a magnificent telescopic star cluster on its hilt, and two smaller stars on its blade. The left hand holds, in the cluster around *Algol*, the dripping head of Medusa, one of the three terrible Gorgons, for the slaying of which the grati-

tude of mankind placed him eternally in the heavens and in the most splendid portion of the galaxy. Algenib and Algol, with Almaach in Andromeda, are second magnitude stars; *Gamma* and *Delta*, third magnitude. Capella is in the neighboring constellation of Auriga, the charioteer, and is of the first magnitude.

Now don't let Algol, the winking eye of the dread Medusa, change us into stone—stone indifference. On the contrary, far otherwise. How shall we find "Al Gol," the demon of the Arabians? Out, let us go, the first clear November night. When the Pleiades rise nearly half way up the eastern sky, draw a line from them, parallel to the horizon, northward, just across the milky-way to Capella. Right above this line, with his body in the milky-way, is Perseus. Higher over his head, in the milky-way, is the W shaped constellation of *Cassiopeia*. Nine degrees E. by N. from Algol is the bright star Algenib, which, with Almaach, twelve degrees west or towards the zenith, makes a perfect right angle at Algol, with the open part towards *Cassiopeia*. By means of this strikingly perfect figure the three stars last mentioned may always be recognized, without the possibility of mistaking them. Our cut will now give all the directions necessary to find Algol which, for all except nine hours out of every two days, twenty hours and about forty-nine minutes, shines as a brilliant star of the *second* magnitude. During these nine hours, it grows dimmer for four hours and a quarter, until it is only of the *fourth* magnitude. After fifteen minutes of this obscurity it commences to brighten, and in a little over four hours it is normal again. Before we enquire the cause of this strange, secular winking, as if Medusa's eye were not yet still in death, let us observe the obscurations. We give the calculated time for the maximum obscurations during night. A little over four hours before or four hours after, will give us respectively the time of commencement or end of the phenomenon. We use sixtieth meridian, twenty-four hour time, one hour faster than eastern or railway time.

MAXIMUM OBSERVATIONS OF ALGOL.

Nov. 7th,	6.34 o'clock,	(A. M.)
Nov. 13th,	0.11	" "
Nov. 15th,	21.00	" (P. M.)
Nov. 18th,	17.49	" (hardly dark.)
Dec. 3rd,	1.53	" (P. M.)
Dec. 5th,	22.42	" "
Dec. 8th,	19.31	" "
Dec. 11th,	16.20	" (hardly dark.)
Dec. 26th,	0.24	" (A. M.)
Dec. 28th,	21.13	" (P. M.)
Dec. 31st,	18.02	" "

The next date can be found by adding two days, twenty hours, forty-nine minutes (nearly), to the previous date, and so on. In our next we shall endeavor to show the latest theory of this phenomenon. We hope our readers may in the meantime observe this strange sight for themselves. Its explanation opens up a most striking view of what is going on among the quiet, distant, twinkling orbs of heaven.

A NEW planet was discovered September 21st, by Herr Palisa, of Vienna. It is asteroid, No. 269. Our solar system is proving to have a great many more members than was anticipated by the older astronomers.

ANOTHER SEPTEMBER METEOR.—September 13th, 8.52 P. M., a meteor passed over a portion of Ireland in approximately the same direction as the one two nights later over Nova Scotia. It was extremely bright, vanished 25° or 30° above the horizon, and came within forty or fifty miles of the earth's surface. The sound of its concussion with the upper air, like that of distant thunder, reached the ear in three and one-half minutes. Perhaps we were passing through a meteoric orbit about the middle of September. If so the meteors are not such chaff as are the Leonids and Andromeds of November.

A MID-DAY STAR.—Some days since it was announced in the newspapers that a star was seen at Toledo at mid-day, and people, if they thought anything about the matter, probably wondered why it should be seen at mid-day there and no other place. The star is the planet Venus. It may now be seen in the sky any bright, clear day between sunrise and about two o'clock in the afternoon. During the mornings of this first week in November it is a very interesting object, with the sun in the eastern sky and the waning moon in the west. The best way to see it is to rise about half an hour before the sun, when this bright morning star is still brilliant in the eastern sky, carefully note its position, and make an imaginary arc in the sky of its course westward. It may be found any time during a clear day along this arc, about thirty-five or forty degrees in advance of the sun.

The total amount of the education grant in Newfoundland for 1886 was \$119,500. Of this grants to the Church of England stand as follows: for general purposes, \$29,834.08; books, apparatus, etc., \$458.83; training teachers, \$1,863.37; Church of England Academy, \$3,077.49; encouragement of teachers, \$917.66; providing superior education, \$579.06; school in destitute localities, \$835.33; Carbonar grammar school, \$230.29; total, \$38,795.20.

For the REVIEW.]

NEWFOUNDLAND SCHOOL SYSTEM ONCE MORE.

As was to be expected, Dr. Milligan, one of the "well paid Superintendents" of schools, has, after three months' hesitation, stepped out in defence of the system which we briefly criticised in the first issue of your admirable journal. Modesty might have suggested the propriety of leaving this work to other hands; but when trumpet-blowing is desired perhaps no one can do it so effectually as oneself.

I am sorry to observe that Dr. Milligan has largely mistaken personalities for argument. My article, he kindly says, is "a caricature," my "charges are misleading," "smack (?) of prejudice"—I am guilty of "glaring omissions" and "exaggerated assertions," of "extravagant deductions" and "unwarranted reflections;" the article is "a tirade," its terms "studiously vague," "fancy serves for fact;" "with light duties" I received "\$2,000 a year, with manse and perquisites," and yet have the unparalleled audacity to "speak flippantly," to utter "grandiloquent sentences," and to show myself "exalted in my own judgment by my obvious prejudice."

I have no reply to make to these personalities, except to say that I should have expected a more gentlemanly style from the Reverend Doctor Milligan when writing for an educational review, and less angry passion in an aged minister in referring to an article which attacked a *system*, not a *person*.

There is no better evidence of the truth of my strictures than the fact that they have so roused the ire and disturbed the equanimity of one who, as I was credibly informed, had much to do in fastening the present sectarian school system on Newfoundland.

Your space will not permit me to refer at length to the many charges in the Doctor's prolix epistle, nor is there necessity. It will only be necessary to strip his charges of their superfluous verbiage to discover their weakness. Our article charged the Newfoundland school system with promoting bigotry and checking the growth of patriotism. What is the Doctor's answer? "The Education Act has a conscience clause and I never saw it violated." (Did it never occur to him that some things might happen in schools without his knowledge?) "The R. R. series of books are used." But let the reader bear in mind it was not said by us that the school teachers taught sectarian doctrines, or that the school books were sectarian in their character. What was asserted, and what we still affirm, is that the children of one sect are taught from infancy to look with jealous and unfriendly eye upon those of another sect. How are they so taught? By the very names of the schools which they attend, by the fact that those of one sect are separated from

those of another. I myself have witnessed many an angry encounter between children attending these schools, in which the church names of the combatants were freely bandied back and forth with angry epithets; that of two children about seven years of age fighting on the public street, and saying, "you're a Wesleyan"—"you're a Catholic;" such a scene I have witnessed between two school children on their way from their separate schools. You say it might have occurred in a common school system. Yes, but the system which sends two playmates to two schools, simply and only because their parents go to two churches, is responsible for much of the denominational bitterness which confessedly exists, not only among children, but among adults, in the outports of Newfoundland. I charge the system with being the parent, or at least the promoter, of the spirit which leads every sect in the country to demand its proportion of the public offices, its quota of representatives in the government, its due share of members on every public committee, and which even boycotts merchants and mechanics of another ecclesiastical stripe. What should we think here in Canada of Wesleyans, or Episcopalians, or Catholics, getting up opposition to a government because there was one too many of the other sect in the cabinet, or of a public protest against a native governor whom the Queen had appointed because of his belonging to the religion of the minority? These are examples of narrowness of view that you cannot find in the land of common schools. In regard to the Doctor's other replies, I fail to see how the fact that some children of one denomination attend the schools of another (many do so from necessity, because their own people are unable to support a school at all, or unable to support an efficient school) or the other fact that a teacher of one denomination is sometimes employed by another (a very rare thing), I fail to see how these exceptional occurrences disprove the statement that the system propagates sectarianism.

Even the Rev. Mr. Harvey, whom Dr. M. quotes, who has very suddenly and unexpectedly become the apologist of a system, the introduction of which no one more strenuously opposed, admits that "society is in the theological stage of development—by which we mean that *sectarian considerations and feelings are paramount, and patriotic sentiments weak and powerless in comparison.*" He fails, however, to admit what no man knows more certainly, that the separate school system is largely responsible for the perpetuation and aggravation of this type of social life.

We charged that the system was expensive. Our words were that "it involved at least three times the

cost of an *equally efficient* public free school system," but the Doctor overlooks the word *equally efficient*, and compares its cost with that of the greatly more efficient systems of N. S. and P. E. I. The Doctor knows that many an article costing \$5 is vastly more expensive than other articles costing \$10. No amount of special pleading can convince his readers that a system which involves the building and equipping and sustaining of three academies and training schools side by side, where the same branches are taught, and the same training given, and the only difference between which is their religious color, is not greatly more expensive than a system requiring only one academy and training school as in P. E. I. Wherever, too, there are two or three schools in a small community, where but for the religious question there would be one, it is equally plain that the expense is three-fold. Dr. Milligan's cavalier method of replying that because the cost of education is a dollar or two greater per pupil in Nova Scotia and P. E. I., therefore the Newfoundland system is inexpensive, will not deceive any one who thinks for a moment what the people receive for what they do pay. It is easy for him to disparage the accuracy of the census returns where they tell against him, but no one who knows Newfoundland will be found to assert that more than one in three or four of its adult population is able to read and write. There is no reason to discredit the census returns, which assert that only about 90,000 out of a population of over 190,000 are able to read and write.

Dr. Milligan has not stated the amount of teachers' salaries. They are undeniably small. Neither has the learned Doctor denied that "there are many localities unable to keep a school open more than a few months in the year, others are without a teacher for years together."

The great stock in trade argument of both Dr. Milligan and Mr. Harvey, is the religious argument. The system has affected even these learned gentlemen, rendering them more sectarian than they might otherwise be. Dr. Milligan, after alluding to the unsectarian systems of these Lower Provinces, and to the dual separate system in Ontario and Quebec, admits that "there might be perfect agreement between him and the writer in recommending one or the other of the above systems if only practicable, and circumstances were favorable;" and Mr. Harvey, after sketching our noble New Brunswick system, shows his real views in the sentence—"If our choice lay between this system and the one we possess, there would be no room whatever for doubt as to which is preferable."

But after these admissions they labor to show that our systems would be unworkable in Newfoundland.

And what do they say? Not that the system has ever been tried and found wanting, for it has not been tried. Not that Newfoundlanders are a different race from New Brunswickers or P. E. Islanders; they are the same race. It is not that the free school system is unsuited to the genius of a free people. Listen: "We have 75,000 Roman Catholic fellow countrymen"—"75,254 out of a total population of 196,085 make separate schools unsuitable."

The religious difficulty is the great bugbear. But why should that be an insuperable hindrance? Less than five-thirteenths of the population are Roman Catholics. But is that any reason why the other eight-thirteenths should not have a school system that will suit the majority?

The system in P. E. Island is an example. It was obtained ten years ago by a strict party vote, and has worked well ever since. The Island population is more largely Roman Catholic than that of Newfoundland, being as follows: Catholics, 47,115; Presbyterians, 33,835; Methodists, 13,485; Baptists, 6,236; Church of England, 7,192; others, 1,028—Total, 108,891. "Since the system became the law of the land," writes D. Montgomery, Chief Superintendent of Education in P. E. I., "the Catholics have not given it any opposition, but have invariably availed themselves of its provisions, to give their children a good common school education. The Bishop of Charlottetown is a very estimable man who has done much for the cause of education, and although he is strongly in favor of separate schools he does not favor any strife over a question fairly settled at the polls."

Now, how does the system work in P. E. I.? The Act became law in 1877. The number enrolled in school then was 15,431. In 1886 the number enrolled in the public schools alone was 22,545, in private schools about 700, or an increase of over 46 per cent. in ten years, whilst the average daily attendance has increased over 50 per cent. Allowing for probable increase in population since the census was last taken, more than *1 in 5 of the population are attending school*. In Newfoundland the proportion is *only 1 in 7*. The average salary to male teachers of 1st class is \$414.14; 2nd class, \$280.75; 3rd class, \$224.66. Female teachers \$302.72; \$220.00; and \$161.58. I do not know the Newfoundland figures, but they are much lower.

Mr. Montgomery states that "the number over ten years of age who cannot read or write is very small indeed, and almost entirely confined to the Acadian population." I have spent many years on the Island and am well acquainted with its population, and I never met more than two or three who could not read and write. The contrast in this respect with Newfoundland is very great. If, then, in P. E. I. where the

Roman Catholic element is considerably larger than in Newfoundland, where the clergy of that church are equally opposed to the principle of common schools, and where the law was carried after a struggle at the polls, the system works well, as is evident from the results—"no opposition," "Roman Catholics invariably avail themselves of its privileges," "an average increase of 50 per cent. in daily attendance in ten years," "one in five of the population in school," "larger salaries to teachers," and therefore better men, and the almost entire absence of illiteracy—if the law is practicable and workable there, why not in Newfoundland?

In regard to inspection, it cannot be too strongly urged upon the people and government of Newfoundland that they should as soon as possible change the methods now in vogue for one in which educational affairs may be placed in the hands of *one* competent man. The idea of three men travelling over the same ground, one picking out Methodist schools, one Episcopalian, and one Catholic, making out and printing three distinct reports, in a country where much travelling is necessary, is too absurd. If Dr. Milligan could induce the Catholics, Methodists, and Episcopalians to settle in three distinct parts of the Island it would not be so bad; but until that is done the present system of inspection cannot but be weak, laborious, expensive, and very unsatisfactory. A great improvement even upon the present sectarian system would be to have *one superintendent*, with two or three inspectors under him, with an educational diocese for each; the public would then have some better guarantee that good work is being done, than in the three reports of rival sectarian superintendents.

Want of space prevents me from referring at greater length to the Doctor's production. I think, however, he will find it difficult much longer to persuade a long-suffering people, a people who feel the humiliation and expense of importing most of their professional men of higher standing, because of the poor educational facilities the country provides. I think he will find it difficult to persuade intelligent men, at least, that the present sectarian system is able to give a liberal education to all the children of Newfoundlanders; or that the spectacle of three "well-paid" superintendents, spending their summer months in travelling from bay to bay over the same execrable roads, looking in only upon schools whose pupils believe the same catechism as they do; and their winter months in superintending the training of three sets of teachers in three rival normal schools, is for edification.

It is not denied that some of these academies are well manned, that they have able teachers. Nor is it asserted that the superintendents do their work ill, or

are overpaid for the work they accomplish. No attack is made upon men, but upon a system that is behind the age, and which, in spite of all Dr. M. is able to say in its favor, is inefficient, and therefore expensive, no matter how little it costs, and as P. E. Island teaches us, not the best or only system practicable in Newfoundland.

Thanking you for so much of your valuable space,
I am, yours truly,

L. G. M.

For the REVIEW.]

THE TEACHERS' WORST ENEMY.

Now that the time has arrived when the school-room must be kept warm, teachers should prepare to fight their invisible but powerful foe, *carbonic acid* with its allies.

But first, it is necessary to believe that a thing exists before we attempt to remove it; and strange as it may seem, I have known most enthusiastic teachers struggle on, apparently ignorant of this enemy that was overpowering them.

Let us spend a day with one of these *morning* enthusiasts, and observe the subtle working of the poison.

The first hour passes so quickly and pleasantly that we have not noticed, until now, the flushed faces of the children and an uncomfortable, burning sensation in our own. I suggest the opening of a door or window; but some one feels a draught, so the opening is immediately closed. By this time the contents of fifty or sixty pairs of lungs have pretty well taken possession of the room and will soon have possession of our brains.

The next hour seems to drag; the pupils become inattentive; the teacher begins to wilt. Recess is welcome. The children get away as quickly as possible from the now disgusting atmosphere of the school-room; but Miss Novice remains at her desk, thankful to rest for a few moments.

Another hour adds to the poison, which all partake of freely, when Miss Novice complains of nausea and weariness. Her one object now is to get through the rest of the session by any means.

The afternoon is a repetition of the experience of the morning, with the addition of a headache and greater weariness.

Disappointed and exhausted, Miss Novice reaches home with no greater ambition in life than to be "let alone," and to sleep if possible; while the family vote her "cross and nervous."

But, you ask, how can all this be prevented?

I repeat, *fight*, Fight the fiend that robs the pleasant tone from your voice, the bloom from your cheek, the brightness from your eye!

"How?"

With the weapon of pure air.

If your school-room is not scientifically ventilated, raise the lower sash of the windows and set in a narrow board. This will give a steady current without a dangerous draught. Change the air of the room every half hour by throwing open windows and doors for a moment. Do not remain in the school house at noon. Ventilate your bedroom. Wear loose clothing to insure deep breathing. Engage in the study of some subject of natural science, as geology, botany, or astronomy, so as to be in the open air as much as possible after school hours, and I am sure you will become healthier and better men and women.

Halifax, N. S.

I. M. C.

[OXYGEN.—English authorities, at the late health exhibition in London, recommended 800 cubic feet of fresh air per hour for each pupil as a minimum. If possible it should be 1,000 cubic feet. Proper ventilation in winter time is one of the most difficult things to secure in this country.—Ed.]

SCHOOL AND COLLEGE.

Convocation, at the Dalhousie College, N. S., was on the 18th, when the inaugural was delivered by Prof. Seth: "Philosophy the Science of Sciences." \$9,400.00 were won at the entrance examinations, as follows: Exhibitions, \$400 each.—(Senior, entering 3rd year), 1st, Laird, P. E. I.; 2nd, Frazee, Dartmouth, N. S.; 3rd, Henry, Shubenacadie, N. S.; 4th, Putnam, Onslow, N. S.; 5th, Fulton, Stewiacke, N. S. (Junior, entering 1st year), 1st, Magee, Digby, N. S.; 2nd, Creighton, West River, N. S.; 3rd, Moore, Salisbury, N. B.; 4th, Brehaut, P. E. I.; 5th, MacMillan, P. E. I. Bursaries, \$300 each.—(Senior), 1st Brown, N. S.; 2nd, Fraser, Halifax; 3rd, Macdonald, Hopewell, N. S.; 4th, Fraser, West River Station, N. S.; 5th, Harvey, Hants, N. S.; 6th, Davison, Halifax; 7th, Allison, Halifax; 8th, Burkett, Kentville, N. S. (Junior), 1st, Murray, P. E. I.; 2nd, Macrae, St. John, N. B.; 3rd, Tupper, New Glasgow, N. S.; 4th, Oliver, Digby, N. S.; 5th, Robertson, P. E. I.; 6th, Robinson, Pictou; 7th, McLean, Hopewell, N. S.; 8th, Jordan, P. E. I.; 9th, Turnbull, Digby; 10th, McMillan, Cape Breton. A larger number than ever before matriculated.

At the opening convocation of King's College, Windsor, Professor Hammond presented Rev. H. A. Harley, B. A. for his M. A., which was conferred by President Brock. Mr. John Medley Withycombe, of Trinity, Newfoundland, winner of the Almon-Welsford prize, read a Latin oration in praise of Major Welsford, the hero of Redan. The Stevenson scholar-

ships were won by Mr. S. W. Symonds, Halifax, and Mr. J. M. Withycombe.

We have received the Catalogue of St. Francis Xavier College and Academy, Antigonish, N. S. It has a staff of seven professors. In 1880 a new wing was built at a cost of \$11,000. Still later, His Lordship Bishop Cameron raised from the people of his diocese \$21,155 to form an endowment. Its library is yearly increasing, as well as its physical and chemical apparatus. Seventy-five students have been enrolled during the year. The college year opened September 6th. All Nova Scotian colleges, we observe, are approximating this season for the commencement of the academic year. If the process of natural selection were allowed to come into free operation, our academies and common schools would also fall into the same lines, parallel with those of our natural conditions. The advantages are so great that the colleges are moving, although it necessitates the disjoining of the university work from that of the lower schools. Rev. Dr. McNeill, the President of St. Francis Xavier, completed his education in France and Italy, and is eminent as a scientific, as well as a linguistic and literary scholar.

The kindergarten movement at Truro, N. S., which has apparently followed the powerful appeal made first by Mrs. H. Condon, before the Alumni Association of the Provincial Normal School, last summer, is rapidly assuming a definite form. We understand that a first-class kindergartner from St. Louis—"one who can train"—is in view. An outfit has already been procured on very liberal terms from Selby & Co., Toronto. Thirty pupils are enrolled. The institution is intended to be a first-class one, carrying out Fröbel's idea without regard to cost, and therefore something which has not been attempted hitherto in these provinces. While the people of Truro enjoy great educational privileges as the gift of the province, they acknowledge their appreciation of the situation, we understand, by a generous desire to contribute from their own means for the advancement of educational reform. For the benefit of many of our teachers, we shall endeavor to supply short notes on the kindergarten methods from time to time.

We have received the Register of the School of Agriculture, Truro, N. S., for 1886-7. It is under the direction of Professor Hermon W. Smith, B. Sc., (Cornell). During the coming season it is proposed to invite leading farmers from different parts of the Province to come and lecture to the students upon those particular branches in which they have been pre-eminently successful, as dairying, fruit-growing,

etc. The Legislature has an appropriation for the purchase of a farm. A programme of the work for the year is given; and in the appendix are published very creditable papers by students who have passed through the school. These are as follows: 1st, Feeding Animals, by A. A. Dechman; 2nd, Chemistry in some of its Relations to Agriculture, by Guilford R. Marshall; 3rd, Milk, by Alfred A. King. The graduating thesis of Mr. George B. McGill, Round Hill, Annapolis Co., N. S., on "Diseases of Plants," will shortly be published in a pamphlet.

Fifteen or sixteen Pictou Academy students are attending the Medical Faculty of McGill University, Montreal, this winter. A few are also attending the Arts Faculty and the Presbyterian College. They are known as *Pictovians*—not *Pictonians*. The latter title is that of the natives of Pictou County, the former is the title of the Academic Alumni.

The Victoria School of Art and Design, at Halifax, was announced to have opened October 31st. Mr. George Harvey, No. 43 Victoria Road, Halifax, is head master. The school starts under the best possible management, and we trust ere many years the provinces will reap no small benefit from the movement now inaugurated. Superior McKay, of the Halifax schools, is Secretary.

Kings College, Windsor, will celebrate its centennial in June, 1888. It will enter on its second century with a promise of usefulness and prosperity, we hope, that may widen with the years to come.

EDUCATIONAL NOTES.

Professor W. A. Antony, speaking in the American Association, section of Physics, on the importance of teaching physical science in the public schools, said that proper scientific instruction in the primary schools would teach children to avoid the mistake of attempting the impossible. While grammar should be put off to the last, language should be taught by reading, not by rules; the geography, after teaching the form of the earth, should be used only as a book of reference; and the commercial departments of arithmetic should be relegated to the business school; children in their earliest experiences have to do with heat, light, sound, movement and magnetism. Physics should be taught by calling attention to familiar facts, and then explaining them.—*Popular Science Monthly*.

Regarding the word "education," it should be remembered that there are two words in the Latin, spelled alike, but with somewhat different meanings: the one *educere* (long *e* and *u*), meaning "to lead

forth," "to draw out," etc., from which we get *educere* and *education*; the other *educere* (long *e* and short *u*), *educare*, meaning "to bring up a child physically or mentally," "to reach," "to educate," also "to nourish," "support," etc. It is from the latter, of course, that we get our word "education."

No one seems to be able to say precisely what the new education is. It seems to be rather an attitude, a tendency, than a definite principle or set of principles. Still, all its advocates would agree in certain general postulates. They would all hold that no study is valuable that does not develop power; that the cultivation of memory should be made subservient to the cultivation of the higher faculties of the mind; that instruction should be adapted to the condition of the pupil, and not to the wants of the future man; that greater stress should be laid on the natural sciences and on the modern languages and literature, and less on the languages and literatures of Greece and Rome; that the curricula of our schools in general require readjustment; that industrial training should form a part of the education of all classes; that the higher education of woman is as imperatively necessary as that of man; that teachers need specific professional training—and in all this we agree with them.—*Journal of Pedagogy*.

Every teacher, who is likewise what every teacher should be, himself a student, knows well what it is to reach the limit of capacity for useful mental effort. When the tension has been kept on for a time, and no very long time either, counting by hours of the clock, a point is reached at which the store of brain energy shows signs of exhaustion. The wheels revolve more and more slowly. Interest flags. Will effort becomes painful and unsatisfactory. The machinery has run down. The wise student soon learns to recognize the symptoms, listens to nature's warning, and, if possible, closes his books and goes forth for rest and recuperation. The same thing is constantly taking place in the school-room. The inexperienced teacher too often fails to perceive the cause; forgets that the power to sustain attention is, in the case of small children, to be measured by minutes, not by hours; and enters upon a struggle which is not only hopeless but mischievous, against the lassitude which he mistakes for idleness or perversity. The judicious teacher, on the other hand, quickly sees that the moment has come for rest and change, or recreation. A supply of fresh air, a few minutes of drill, or marching, or singing, a diversion to studies or exercises of a different kind, will speedily relax the strain, restore brightness and good feeling, and save the school from an afternoon of failure or disaster.

SCIENTIFIC NOTES.

The Hop Aphis, noticed in our question column last month as injuring the hop vines in Amherst, have done damage last year in the State of New York alone to the extent of over \$200,000.

Seven years ago Ontario exported over \$600,000 worth of clover seed. A new insect, the clover midge—of the same genus as the wheat midge, and the Hessian fly—made its appearance, and now the Ontario farmers instead of exporting clover seed, import it. A knowledge of the habits of the insect has led to a completely successful method of treatment.

The Report of the Department of Agriculture of the United States, under the direction of Hon. Norman J. Colman, Commissioner of Agriculture, for 1886, shows what a magnificent work is going on under government superintendence in every department of science bearing on agriculture in that country. Perhaps in no department will the great Republic compare more favorably with other nations than in their extensive application of scientific methods to develop the maximum productiveness of their country.

QUESTION DEPARTMENT.

Questions on scientific subjects may be addressed to EDUCATIONAL REVIEW, Pictou, N. S., to whom also all natural history specimens may be submitted for identification; those on ancient classics and mathematics to EDUCATIONAL REVIEW, Charlottetown, P. E. Island, and all questions on general subjects—English, school management, methods, etc.—to EDUCATIONAL REVIEW, St. John, N. B. On technical questions the editors will seek the views of teachers of experience, in order that this page may be of the greatest possible advantage to our teachers.

Questions and Answers.

1. "He reckoned without his host;" what is the derivation of this?

The phrase, "He reckoned without his host," suggests its origin quite clearly. It is intended to point out the folly of computing the cost of what one has got at an inn, without consulting the person whose duty and whose right it is to make up the charges. And it is taken from a very old proverb, current in England since three hundred years ago, at least. Perhaps the explanation of the proverb, given in *Bailey's Dictionary*, published in the first quarter of the 18th century, may be interesting. "*He that reckons without his host must reckon again.*" This, though a tippling proverb, has a farther meaning than persons making their own reckoning at a tavern or ale-house, and is usually applied to such persons who are apt to be partial in their own favor, flattering themselves with the advantages they fancy to be on their side in any affair, and making no allowance for the disadvantage that will or may

attend them; so, *Chi fa conto senza l'Hoste conto due volto*, say the *Italians*; and *Qui compte sans son hoste il lui convient compter deux fois*, say the *French*.

W. P. D.

LITERARY NOTES.

Dr. J. G. McGregor, of Dalhousie College, is the author of an elaborate treatise on kinematics and dynamics which has just been issued by McMillan & Co., London.

Seidel's Industrial Instruction, translated by Miss Margaret K. Smith, of the Oswego (N. Y.), Normal School, is to be published by D. C. Heath & Co. in a few days. This book presents a philosophical exposition of the principles underlying the claims of hand labor to a place on the school programme. All educators interested in the present discussions concerning industrial education are sure to welcome this timely and valuable addition to the literature on the subject.

D. C. Heath & Co. will publish this week, Nature Reader, Sea-side and Way-side, No. 1, by Julia McNair Wright. This is the first of a series of Primary Readers intended to awaken in young children a taste for scientific study, to develop their powers of attention, and to encourage thought and observation, by directing their minds to the living things that meet their eyes on the road-side, at the sea-shore and about their homes. This First Reader treats of crabs, wasps, spiders, bees, and some univalve mollusks. The Second Reader will treat of ants, flies, earth-worms, beetles, barnacles, star fish, and dragon flies. The Third Reader will give lessons in plant life, grasshoppers, butterflies and birds. Each Reader is furnished with review questions sufficient to cover the leading facts presented. The books will contain numerous illustrations especially prepared for this series.

The Dictionary of the Micmac Language, prepared by Rev. S. T. Rand, is now in the hands of the printer. Mr. Rand says: The work will contain about four hundred pages of quarto, with two columns on each page. New, beautiful black type has been procured for the purpose, so that the English is clearly distinguished from the Micmac. Several forms of eight pages each have already been struck off, and I am much pleased with their appearance.

BOOKS AND EXCHANGES.

THE NEW CANADIAN COUNTING HOUSE BOOK-KEEPING—containing a complete elucidation of the science of accounts by the latest and most approved methods, business correspondence, mercantile forms, and other valuable information, designed for the use of counting houses, business colleges, academies and high schools, by S. G. Beatty and J. W. Johnson, F. C. A. Seventh edition, revised and enlarged. Published by the Ontario Business College, Belleville, Ont. Pages, 324; price, \$3.00. This volume is divided into three parts, each distinct in its own special design, but progressively arranged. Part I. contains a complete and comprehensive course of book-keeping, illustrated by examples. Part II. is for more advanced pupils, and includes wholesale and retail merchandising, manufacturing, settlement of estates, steam-

boating, municipal book-keeping, warehousing, banking, farm accounts, church accounts, practical office work, joint stock companies, etc. Part III. contains a comprehensive summary of Ontario Law, forms of business papers in general use, and the principal laws which govern them, full instructions on commercial correspondence, with a variety of model business letters, short practical methods of computing interest, percentage, partial payments, partnership settlements, etc., besides valuable rules for lumbermen, mechanics and farmers, illustrated by examples. We know of no more complete work of the kind.

TEXT-BOOK OF NEWFOUNDLAND HISTORY—For use of schools and academies, by the Rev. M. Harvey, F. R. G. S., author of "Newfoundland—the Oldest British Colony;" lectures, "Literary and Biographical;" articles, "Newfoundland and Labrador" in the *Encyclopædia Britannica*, etc., with map and illustrations: Boston, Doyle & Whittle, publishers. The readers of the REVIEW have already been introduced to the Rev. Moses Harvey, the best known man of Newfoundland. This little work of some 200 pages is written in the smoothest and most effective manner of any similar text-book which has come to our knowledge. Although we have perused Mr. Harvey's larger work—a history which reads almost like a romance—we have read over again the abridged story with a pleasure which perhaps was only enhanced by our previous knowledge. The thread of development is never lost in the necessary change of scene; and a bird's eye view of the whole is given with details sufficient to give color and life to the panorama. A series of appendices give most valuable statistical information respecting the Island. Any one who has not the time to read the larger history of Newfoundland, can in this volume save the time and obtain the history in a very readable and beautifully digested form.

SEVENTY LESSONS IN SPELLING—A complete collection of different common words with definitions and pronunciations, etc., arranged for the use of business colleges, academies, etc. Retail 35 cents; sample 25. Williams & Rogers, publishers, Rochester, New York. This work contains 3,500 common words likely to be misspelled. It gives definitions, pronunciations of difficult words, rules for the use of capitals and abbreviations, etc. As long as the tyranny of customs exacts our present abominable spelling of English, so long will convenient spellers be a necessary and profitable tax upon all.

THEORETICAL AND PRACTICAL BOOK-KEEPING—By double and single entry, for use in business colleges, common schools, high schools and academies and for self-instruction. Retail price, \$2.50. Wholesale (net), \$1.35. Williams & Rogers, publishers, Rochester, New York.

This firm publishes a series of books for commercial instruction. There is the "Introductory Book-keeping," 104 pp.; "Book-keeping," 175 pp.; "Complete Book-keeping," 225 pp.; "Commercial Law," 225 pp., etc. "Complete Book-keeping" is the cover title for the above, and it well deserves the distinction. Its typographical execution is very fine, most of the sets being in beautiful script black, and read as in real accounts. First we find 80 large pages

devoted to the system of double entry, then 18 to single entry; 4 to a system for the executor of a will; 6 to a petty ledger; 8 to a cash method; 10 to shipping and commission; 16 to wholesale; 12 to retailer's books; 8 to manufacturing; 18 to business practice; 54 to banking, and a valuable appendix of 10 pages more. Sample copies will be mailed with a view to introduction at wholesale prices. It is one of the text-books of the Rochester Business University, which is a sufficient recommendation of its completeness.

THE ENGLISH LANGUAGE, its Grammar, History and Literature, with chapters on composition, versification, paraphrasing, and punctuation, by J. M. D. Meiklejohn, M. A., Professor in the theory, history and practice of education in the University of St. Andrew's, Scotland. D. C. Heath & Co., Publishers, Boston, New York and Chicago, 1887. Price \$1.40, post-paid. When this book was announced some time ago, we expected from the scholarly reputation of its author that it would be another addition to the list of valuable educational works which D. C. Heath & Co. have been publishing for the past few years. We have not been disappointed. Of all the text-books on the English language—and their name is legion—this, for conciseness, clearness, and originality, seems to bear off the palm. It is in comparative grammar—in the history and origin of our language, word-building, and strong etymological features—that this work will prove a boon to students, as well as in the sketch of English literature which comprises half of the 400 pages which make up the book. There is not a single page in the book which is uninteresting or overloaded with details. While it is simple and comprehensive, it is marvellous how much of English language and literature has been compressed into such a small form without the sacrifice of clearness. It is designed to cover a four years' course in high schools, academies and colleges, and should come into general use.

THE LIGHTS OF TWO CENTURIES, edited by Rev. E. E. Hale. A. S. Barnes & Co., New York and Chicago, 1887. \$1.70, post paid. Price to Reading Circle members, \$1.40, post-paid. This interesting work, illustrated with fifty portraits, and containing sketches of the most famous names of literature, science and art for the past two centuries, will be thoroughly appreciated by the teacher and student. The work has been specially prepared to meet a want in education and general culture. It is written in a pleasing style, the most prominent points in the lives and works of these master minds intelligently set forth, and though a minor point yet one of great educational value to the student, the pronunciation of difficult words is given in the text. It is not only adapted to the wants of teachers and students, but is of absorbing interest to the general reader. It is a book of over 600 pages, of beautiful finish, and has so many excellent features that it should be widely read.

EXERCISES IN ENGLISH SYNTAX: Published by C. W. Bardeen, Syracuse, N. Y., 1887. This does not contain exercises in false syntax to be corrected. The author in his preface very properly observes: "Correcting false syntax is by no means a sure test of the ability to use correct language." Acting on this idea he carefully excludes

such examples, and in their place gives exercise in composition, which ensures a large amount of drill on the chief rules of syntax.

THE STUDY OF RHETORIC in the College Course, by John F. Genung, Ph. D., Professor of Rhetoric in Amherst College: Boston, D. C. Heath & Co., 1887. Price by mail, 25 cents. This is another of those excellent and cheap monographs on education. It is an earnest and scholarly plea for better methods of instruction in the higher English, and contains an excellent outline of work that may be done with effect in our colleges.

VOLAPUK, No. 3: E. Steiger & Co., 25 Park Place, New York. "A sketch of the world language, invented by J. M. Schleyer." 5 cents, retail; less than 10, 3 cents; 10 to 100, 2 cents; 100 to 1,000, 1½ cents. This is the third pamphlet of the series. It gives a brief outline of the grammar and structure of the language in the compass of five pages. We notice that Steiger & Co. have on hand over fifty different works on Volapuk. This is an extensive literature, considering that Schleyer published the first grammar of Volapuk in 1879.

CÆSAR, HELVETIAN WAR, by W. Welch, M.A., and C.S. Duffield, M. A., with Notes, Maps, Exercises and Vocabulary: Published by MacMillan & Co., London and New York. A cheap and altogether capital book for beginners in Latin translation. 18 mo., about 100 pp. Eighteen pence.

The *Popular Science Monthly* for November has an admirably illustrated paper on the stars of autumn, being a continuation of the series—Astronomy with an Opera Glass, by Garrett P. Serviss. The striking manner in which it is written, with its clear illustrations, make it a very seasonable article.... *St. Nicholas* for November is not only attractive—it is useful. Note the following grain of wisdom in "What's in a Name?" The writer says: "When you are in doubt about a word, hunt it down patiently. It is severe work; but you will find it, even at first, interesting, and at last endlessly amusing. * * If you read the pages of a good work letter by letter—that is to say with real accuracy—you are forever more in some measure an educated person. . . The *Illustrated London News* is interesting to every member of a family, old or young. Its illustrations of life and scenery in all parts of the world give it an educational force making it invaluable for interest and instruction in the family circle. The constant success of the American edition of this periodical is not by any means a surprise when even the contents of a single week is considered. Take for instance the issue of October 29th. The supplement alone, giving an excellent colored portrait of Prince Bismarck, is a valuable souvenir to possess, while in addition there are pictures of the Nizam of Hyderabad, two pages devoted to illustrations of the State of Ireland, another page of Our Troops in Burmah, one of Border Sketches in Kelso, one of Bristol Cathedral, one of the death of Cæsar, and a most attractive picture of a little girl and a dog entitled Speak! The reading matter is as interesting and complete as ever, while the price for all is only ten cents.

All newsdealers have it, and the New York office is in the Potter Building. . . . *Science* for October 28th has several valuable articles on education, including "British Universities and the Training of Teachers," and "Aspects of Education," by Oscar Browning. . . . *The Century*, with the November issue, begins its thirty-fifth volume and eighteenth year, issuing a quarter of a million copies. This circulation is beyond that of any other magazine. This brilliant success has been due to good management, and the fact that it is a magazine for the people, treating living subjects with ability and earnestness. . . . *The Swiss Cross* for November is at hand. Not the least important feature in this well-conducted magazine are the intelligent reports of observations made by young students in scientific matters. . . . The *Toronto Weekly Mail*, the supplement of which is made up largely of agricultural and educational topics, is an excellent paper for one who would keep abreast of the times.

NEW BRUNSWICK NORMAL SCHOOL.

ENTRANCE EXAMINATION.—SEPTEMBER, 1887.

ENGLISH GRAMMAR AND COMPOSITION. *Time, 1 hr. 30 min.*

1. Frame sentences or give quotations illustrating the proper use of the following words, viz.:—Mutual, nice, splendid, awful, rugged, clever, smart, expect, calculate, prefer.

2. Correct the errors in the following sentences, giving reasons for your corrections:—He had spoken only a few words. Who shall I give it to? The ship laid at anchor. Neither he nor his brother sing. If I had of known that the day would have been so fine, I should certainly have went. (*Comment particularly on the foregoing sentence.*)

3. "Knowledge is better than riches." Express this thought at length in your own words.

4. Write a letter to the Principal of a Normal School, conveying your wish to be admitted as a student. Exhibit the form of the letter fully.

5. "Mid pleasures and palaces though we may roam,
Be it ever so humble there is no place like home."

(a) Analyze generally and in detailed form the above passage. (b) Parse the italicized words. (c) Who wrote it?

6. Explain the terms noun, adjective, inflection, gender, person, voice, participle, infinitive, weak and strong (as applied to verbs).

7. Write (a) plurals for brother, chorus, strife, court-martial, mouse-trap; (b) feminine forms for bachelor, fox, songster, sultan, earl; (c) comparative and superlative forms from late, near, old, up, fore; and (d) past tenses and past participle from see, saw, knit, spring and freeze.

N. B.—Any two of the first three questions, together with any three of the last four.

INDUSTRIAL DRAWING. *Time, 1 hr.*

1. What do you understand by the terms *Free-hand drawing*, *geometrical drawing*, and *object drawing*?

2. Compare and contrast the following, pointing out wherein they agree and wherein they differ.

(a) A straight line, a perpendicular line and a vertical line.

- (b) A compound curve and a reversed curve.
 (c) An ellipse and an oval.
 (d) A square and a rectangle.
3. Draw from memory, without the aid of ruler, compasses or other mechanical help, *two* of the following, making each drawing not less than two inches wide.
- (a) A rosette composed of simple curves symmetrically placed in a square.
 (b) A vase outlined by compound reversed curves.
 (c) A design composed of conventionalized forms.

USEFUL KNOWLEDGE. *Time, 1 hr.*

1. Make a list of the principal forest trees of New Brunswick, and name the industries connected with each.
2. Write what you know of the useful minerals of New Brunswick from the following heads: mineral, where found, uses.
3. Explain the beneficial results to be derived from (a) ploughing, (b) the uses of manures, and (c) rotation of crops.
4. "A house is merely an outer garment." "The human body may be compared to a steam engine." Explain these statements.
5. Name the rules of health to be observed in respect to (a) food, (b) clothing, (c) exercise, (d) rest, (e) ventilation, (f) the use of alcohol in any form.

N. B.—Any four of the above taken as a full paper.

SUPERIOR SCHOOL COURSE.

The following course of instruction for superior schools, was submitted to the N. B. Provincial Institute in July last.

STANDARD IX.

- READING. Royal Reader No. VI.
 WRITING. Prescribed text-book.
 ARITHMETIC. Equation of payments, profit and loss, exchange between Canada and England, square and cube root with applications.
 COMPOSITION. Text-book completed, a written translation semi-monthly from the classics. *Modern Course*—One English classic.
 GEOMETRY. Hamlin & Smith, to the end of Book II.
 ALGEBRA. Investigation of formulæ in general results, first section of simple equations and problems G. C. M. and L. C. M.
 GEOGRAPHY. *Classical Course*—Ancient geography. *Modern Course*—Remaining British colonies, general geography of Asia, with special reference to the geography of India, and problems on the globe.
 HISTORY. Swinton's Outlines.
 DRAWING. Continued.
 GRAMMAR. *Modern Course*—Parsing and analysis from the reader.
 LATIN. Bryce's Second Reader. Extracts from Cæsar.
 GREEK. Bryce's First Reader, as far as the verbs.
 FRENCH. (Optional).
 PLANT LIFE. (Optional).
 ANIMAL LIFE. Hygiene.
 PHYSICS. Hotze's text completed.

- BOOK-KEEPING. Single entry.
 MENSURATION. Parallelograms, polygons, quadrilaterals and circles.

STANDARD X.

- READING. Royal Reader No. VI.
 ARITHMETIC. Stocks, consuls, arbitrations of exchange, principles of logarithms.
 COMPOSITION. Dalgleish's advanced text to versification. Essay once a fortnight. Translation from classics fortnightly.
 GEOMETRY. Hamlin & Smith, Book III.
 ALGEBRA. Todhunter, to problems involving two unknown quantities
 GEOGRAPHY. Europe in detail. Problems on the globe.
 HISTORY. Swinton's Outlines.
 DRAWING. Continued (for modern course.)
 GRAMMAR. Same as in Standard IX.
 LATIN. Virgil, Book I. Latin prose composition.
 GREEK. Bryce's First Reader completed.
 FRENCH. (Optional).
 PLANT LIFE. (Optional).
 ANIMAL LIFE. Physiology, Brown's text.
 BOOK-KEEPING. Double entry.
 MENSURATION. Land surveying, Loomis' trigonometry.
 POLITICAL ECONOMY. Mrs. Fawcett.

STANDARD XI.

- READING.
 LITERATURE. An English classic. Versification.
 TRIGONOMETRY. Plane trigonometry, Loomis.
 PHILOSOPHY. Wormell's Natural Philosophy. Dynamics.
 GEOMETRY. Hamlin & Smith, Book IV.
 ALGEBRA. Todhunter, through quadratic equations.
 GEOGRAPHY. Text-book completed.
 HISTORY. Swinton's Outlines.
 DRAWING. Continued for modern course.
 LATIN. Virgil, Book II. One oration of Cicero.
 GREEK. Extracts from Bryce's Second Reader. Homer, Book I, to the end of line 303.
 POLITICAL ECONOMY. Continued.

S. C. WILBUR,
 P. G. McFARLANE,
 PHILIP COX,
 J. W. HICKSON. } *Committee.*

OFFICIAL NOTICES.

Elementary Natural History.

The Board of Education has been pleased to prescribe for use in the Public Schools of the Province, Professor Bailey's Elementary Natural History, published by Messrs J. & A. McMillan, St. John.

This little work treats of Minerals, Plants, and Animals, with special reference to those of our own Provinces, and is designed as a text-book for pupils in Standard IV. in ungraded schools, and for pupils in advance of Standard V. in graded schools.

The requirements of the Course of Instruction in respect of these subjects have not heretofore received that amount of attention which either their educative or practical value deserves, owing chiefly to the want of suitable sources of information. As this want is now supplied by means of this elementary

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work, it is hoped that the subjects of which it treats will hereafter receive that attention due to their importance, and be taught in harmony with the principles recommended by the author.

On sale at the several bookstores at 30 cents.

WILLIAM CROCKET,
Chief Superintendent Education.

Education Office, Fredericton, N. B.,
October 15th, 1887.

N. B.—It is in contemplation to provide and keep on sale at the bookstores at a trifling cost, for such schools as may desire them, small collections of specimens to facilitate the practical study of the work.

Arbor Day.

With the view of removing a doubt that seems to exist as to the permanency of the provision respecting Arbor Day, I wish to state that the following regulation, made April 6th, 1887, is operative in any year until otherwise ordered:

"That teachers be authorized, with the sanction of Trustees, to set apart any Friday that may be deemed most suitable during the month of May or June for the purpose of improving the school grounds and planting thereon trees, shrubs, and flowers, such day to be known as 'Arbor Day,' and when duly observed credit to be given for it as a lawful teaching day.

WILLIAM CROCKET,
Chief Superintendent Education.

Education Office, Fredericton, N. B.,
November 3rd, 1887.

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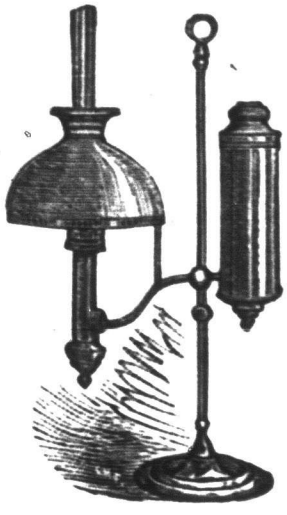
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