# THE EDUCATIONAL REVIEW. 

FOR THE ATLANTIC PROVINCES OF CANADA.

| Vol. II. | SAIN'J JOHN, N. B., OCTOBER, 188s. |
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THE SCHOOLS OF GREATER BRITAIN.

SKETCHES OF THE

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BY JOHN RUSSELL, F.E.I.S., \&c.
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Publishei Monthly.
S'T. JOHN, N. B., OCTOBER, 1888.
Vol. II. No. 5
A. H. MackAY, B. A., B. Se. $\quad$ Editor for Nova Scotip

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## EDITORIAL NOTES.

The Annual School Meetings take place in New Brunswick on Thursday, Oct. 11th.

Teachers will be interested in consulting our advertising pages this month.

Ere tuie Review will make its appearance again the teachers of Nova Scotia will have entered upon the work of a new term-perhaps we should have said a new year, haying the annual report of the education office in mind. The term 'school year' appears in it correctly and appropriately enough. Anyway, on the first of November the kaleidoscope will have made another turn, and from Cape Sable to Cape North, at 9 a. m., about 1,000 new forms will arise behind as many teachers' desks before some 40,000 wondering, curious Nova Scotians, in the most inquisitive stage of their growth. Then will follow the struggle for
supremacy. The eye, the face lines, the tone of voice, the port will be breathlessly scanned in this mental duel. It must be decided who will be the master and for how long. Sometinaes the duel lasts for only a few minutes; more commonly for days, and weeks, and months. But of this we shall talk at another time; we now wish merely to express our sympathy with 700 teachers who are making arrangements to move at the end of this month into new and untried localities, and nearly 300 who are entering upon the profession, the most promising of them with fear and trembling. To the one thousand and one hundred who continue from the one term into the other, we offer congratulations. As they are free from the mental worry of the unsettled, and the strain of the war of conquest in a new school, so are their patrons free from a useless November which is spent by the new teacher in discovering whom and what he is to teach. May the day be hastened when the one thousand one hundred shall be many more!

To the moving teacher we have to say, among the many troublesome arrangements you have to think about, do not forget to intimate your change of address to the Edecational Review. To the stationary teacher, we would suggest the giving of a bint to intelligent trustees to become suscribers, so as to keep them posted in the educational trend of thought and practice in our Atlantic provinces and in the world; and as our education is never complete, intelligent families in the school section, as well as teachers, find the Review of service in stimulating a useful line of thought at home.

We wish, again, to call attention to the reason why the Review differs from many other educational journals in not filling pages with exercises or problems or examination questions in arithmetic, grammar, geography, etc.; just because in these subjects we have very fair text-books. It would require no effort to multiply such exercises to redundancy; but then we would be cultivating fields already fairly cultivated, while other fertile tracts were being left altogether inaccessible. Already we have received an unexpected heartiness of support from many counties of the province, where the teachers have apparently supported us en masse. With the school trustees and other
citizens as our readers, we trust that those who employ our teachers may hereafter come to value them more highly, and be more in sympathy with that educational reform which is already, in many parts of the world, beginning to do more for the state than any other beneticent human power.

In a late number of a Nora Scotia paper a correspondent criticizes the teacher of a school where he found written upon the blackboard these questions: What are the names of the caddidates for the presidential election: What great person of the Cnited state itied within the past few monthe: How did the Linited state whate trat the Fishery Traty" He then adds: "Can there be anything more disloyal in Her Majestys dominion than the primeiple of inculcating the minds of our children with suchaberpinterest as to the working of the l'nited states a as to make it ane every day study: I think that there is sufficient material to be fomat in our own political and historical circles to occupy the time of the children white they are at shool. I do not object th questions in general concerning our friends acros the forder. but I think I speak the mind of many of our haval citienwhon I state that care should be taken that our s.matho lee in structed in detail concerning the British empire and mon in that of the United States.
Could anything be more bigoted and narrow than this? How does the writer know that it is "aneveryday study" from merely seeing the questions on the board during one visit: How do such questions show "a deep interest as to the working of the United States:" And how does he know that the pupilswere not fully "instructed in detail concerning the British empire?" Next to having a competent knowledge of the history and resources of the British empire, pupils shonld early be taught to take an intelligent interest in other countries and what is going on in them, and that is precisely what the teacher, it seems to us, was endeavoring to do.
Such writers defeat any "loyal" object they have in view, especially when they would propose, as this writer does, such silly statements as the following:

The less we know of our cantankerous friends across the morder, in children's classes, the better: on the contrary, I think, such questions as these would be more suitable: ©n what terms should Great Britain receive the state hatk to their former position as a colony" Show that Circat Britain is the rightful mistress of North America.

In an editorial paragraph in another column of the paper, attention is directed to the correspondents complaint, and an "immediate remedy" is demanded for this state of things! The editorial sanctum must hare been invaded on this occasion, for the gentleman whose name stands at the head of the editorial page shows too liberal and cultured a spiritin the pages of bis History, which is the delight of our students to read, to endorse utterances and insinuations like the abore.

## THE NOVA SCOTIAN KINDERGARTEN.

(quoting our remarks in the last number of the REviEN in fawor of provincial aid to the Truro kinderGarten in affilation to the normal school, the Morn. ing Chronich, the provincial government organ, says:

Cour contemporary - wi-h ropecting governmental encour. agement of the himbereaten soutem has leen anticipated by the local cowernment 10 arrangement was made several wethe age wherety in andederation of certain instruction to In civen the normal a lowl pupila by the teacher of the Truro kinderartea, and of admiwim of the normal school pupils at vated time tunture the methoth of teaching the gore crnment are to comerilute a prortion of the alary of the Truro beather Thue at a mall cont the thenvince the normal -hmen pupil will romise a measure of imatration in the
 hereafter in the ir work a tew here in the primary departments uf mur pallix ahouls.

The adrantages now offered to those who can arail themselves of it, are well put in the following letter from the president of the Frmbel Institute of Nova Scotia:

 whatinnal mothon, will bee glat whar that Truro Kinder. gatten Commitue, at a motine heht hat saturday at 8 p . m. pasel a realution allowing persons desirnus of studying Frolull- - otem, under their acompliabed director, Miss Worktonk in come in at any time. during the term, for a perind of not has than whe month. The will be a great privi lege, for so many uf war thather-are mot able to take the full cource right thenugh, hat are neworthelecs, an xinus to improve their teaching hy an intellizent appliation of Frebel's noble s.atem. Sum of curprimary tachers with a laudable am bition, have gene the thited stato at monderable expense and have harned omethine of kowderarten principles, hut as then intitution take their varation at the ame time we have wars the wariment ioconly and ineflicient. It is to be hepald that nur teachers will appretiate the wise action of the committee and make the mont of it competent judges con -iber that mothing for some time, haw heen done which, if actelumen, will be a greater twon th thene engaged in the common wholl of this province, more eupecially in the primary grades. Those applying will be expected to take up the work of the class as they find it. This will be no harrier to succes to an carneut peron acrustomed tor studious application. Even if no the.. $\begin{gathered}\text { w were given, the privilege of tratching }\end{gathered}$ the kimiergirton woulh be worth far more than the fee to a clever tarher. One minht study throry in the closet, but no adequate notion could ix formed without actually seeing the work in progese The fee for one mon:h is 10 , which bringe it within the reach of all whor really wish to know something atum Frablel-methent- For epectal hindergarteners the full moure is a merce-ity, for which ofis is the fee. We hope yet thene thi full coura taken by young ladies as the fitting and tinabine twht 'to a liberal education. Considered philoses phicalls. it in fur the profe-mion of wise motherbood what the law - hown in on the law ere the meticalachool to the physician and burcom, and the divinity hall th the theologian. The world demamburecial rainine for upecial functions in addition to the hroad foundation reennired by thene who lay claim to a liberal education.

## THE SUMMER SCIENCE SCHOOL AT PICTOU.

Our space will not permit of even a feint of description. We can simply chronicle a few leading points of outline. The opening meeting was held in the Convocation hall of the Pictou academy, at $8 \mathrm{p} . \mathrm{m}$., Monday, July 23rd, President MacKay in the chair. An address of welcome from the Town Council was read by the Town clerk, Geo. D. Ines, Esq., and presented.
The inaugural address was then delivered by Prof. F. H. Eaton, A. M., of the Normal school, in which he outlined a wide and philosophical system of public education, showing the place which should be given to work which is now being attempted in our voluntary summer schools.

The President nest read a letter from Sir Wm. I)awson, expressing his regret at being unable to be present, and suggesting the publication of lists of our local fauna, the practical study of which he began in this region in his student days.

Principal James Sheraton, I). D., of Wicliffe (Theological) College, Toronto, was then introduced. In a very eloquent address he vindicated the study of natural science as a search after truth, eulogizing our knowledge, correcting our conceptions, but never contradicting what is the truth, when it is not science falsely so called.

Classes met in the varions lecture rooms of the Academy, beginning at 9 o'clock each day. They were so arranged that no two lectures or demonstrations were going on at the same time, as a general rule. Pictou is probably one of the best locations in the province for a Science School, except as to mineralogical material, in which it cannot compare with the region around Minas Basin. For botanical and zoological work its terrestrial and marine flora and fauna are most extensive and accessible. For geological work, glacial action is strikingly illustrated, the coal mines and formations are present, and within excursion distances are the iron mines and fossiliferous silurian of East River, the red sandstone of P. E. I. and the great doleritic dyke near Mt. Dalhousie.
The arts and manufactures are illustrated in the Glass, Steel, Forge, Electric and Water Works of New Glasgow; Gas Works of Pictou, etc.; and from the summits of Green Hill and of Fitzpatrick Mountain can be seen panoramas of densely settled agricultural country not surpassed in the province. The Science School did not draw upon all these resources, but most of them were utilized to a necessarily very small extent.

We take the following brief diary of work from the Amherst Gazette:-

Tuebday, July 24 Th .
The different departments of Zoology, Botany, Mineralogy, and Physics were opened by Messrs. MacKay, Lay, Pineo and Eaton, respectively. Their lectares were all introductory to the several subjects.

Wednesday; July 25 th .
Zoology. Dissection of lobster in class.
Mineralogy. Use of blowpipe, and tests for various minerals.
Astronomy. Description and use of sextant.
Botany. Classification and use of Key.
Physics. Original experiments by students.
Physiology. The cell and digestion.

## Thursday, Joly 26.

Mineralogy. Blowpipe analysis of various minerals.
Physics. Experiments by students.
Astronomy. Reducing obscrvations of previous days.
In the afternoon an excursion by boat to the Steel and Glass Works of New Glasgow.

Friday, July 27 th.
Mineralogy. Classification of minerals.
Geology. Introduction of subject.
Botary. The cell, and description of compositae.
Zoology. Dissection of clam.
In the afternoon, a walking excursion for scientific purposes to the "Boar's Back," presumably a glacial moraine, and the stone quaries. After tea the school visited the grounds of the Athletic Association, and witnessed runuing and walking matches, and a game of lacrosse.

Saturday, July 28 th.
Mineralogy. Blowpipe and other tests for iron ores, lead and zeolites.

Geology. Talk of geology of country visited yesterday and volcanic action.
Zoology. Dissection of oyster.
Botany. Plant life.-Various plants classified.
Physiology. Digestion.-Various interesting experiments to show action of saliva on starch.

## Monday, July 30th

Mineralogy. Examination on previous work.
Geology. Historical geology.
Physiology. Circulation of blood.
Butany. Examinations.
Astronomy. Star Troops.
In the evening the coal mines at Westville visited. The students were taken down 3,000 feet on an incline, and 1,300 perpendicularly from the surface. The great fan and engines visited.

Teesday, August 1st.
Chemistry. Questions by students; answers by Dr. Waddel. Geology. Moraines and formation of coal.
Astronomy. The Morning Star.
Chemistry. Experiments. Theory of gases. A. H. McKay, B. Sc .

Physics. Exhibition of electroscope, electrical machines, etc. by Mr. McMillan, of Pictou academy.

Bowany. Plant analysis.
Entomology. A. H. Mchay, Eay
Excurion for collecting purposes
Wedmesday, Augrst end.
Chemistry. Examination.
surteying. Introductory lecture.
Physiolugy. Respiration, Dr. Primrose.
Zookg. On birds. Practical work in skinning and mount ing. Classification.
In the afternon the citizens of Pictou very generonsly gave the school a drive to Green Hill, while the ladies prepared a bountiful repast.

Thitraday, Aucicst 3rd.
Surreying. Field work.
Physiokegy. Examinations.
Annual meeting of directors and election of officers. Sail on the harbor by the citizens of Pictou.
In the evening, formal closing.
Announcing of results in examination. Votes of thanks. Addresses, and "Auld Larg Syne " in Conrocation hall.

The citizens of Pictou, with a generous public spirit, spared no pains to show their appreciation of the work of the school. The attendance was not far from being double that of the first sear.

Present at N. S. Summer School of Science, Pictou, 1885.

## Factlty of Listrtctors.

President A. H. MacKay, B.A.. B. Sc., F. R. S. C., F. S. Sc. (London), Zoology: F. H. Eaton, A. M., Physics; A. G. Mac Donald, M. A., Surteving; John Waddel, Ph. I). D. sc. Geology; A. J. Pineo, A. B., Mineralogy: John Stewart, M. D. (Edin..) Philowophy: A. Primrose, M. D., (Edin.) Physiology: E. J. Lay, Esq., Dotany; A Cameron, Esq., Axtronomy; J. B Hall, Pb. D., Secretary; J. B. Sprague, Escy, Ascistant Sec y.

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 Eita J. Yuill do. du: Bertha Forber, Little Harhor, Pictou Co: A D) Willams, (ohdenville, (Guybero: W. Enima Barn hill. Trurn: Ada lawis, do Hextor Mckay, spring Hill: Mary Donohe Malifax E Maky, B A. New (ilavgow, J. E. Creighton. B. A. North Sydney, Dugahd Stuart, B A., Shelburne. Magghe (iraham, Brookticha H. Melinh, B. A. Picton: A. S. Dawson, Pictou.

## Is The Human Color Sense Still Developing?

Discussions of late years on the possible development of the color sense in man within the historic period tend to enforce at least one point in our educational work; that is, the observation and nomenclature of color. Mr. (iladstone's observations in 1858 as to the porerty of the Homeric color-vocabulary, has been extended by other writers. It is stated that blue, as an epithet applied to the sky, does not occur in the Old Testament, the Zend-Avesta, the Rig-Veda, the Homeric poems, or in the Koran. In 18\%\%, Mr. (iladstone held that archaic man had a positive perception only of light and darkness, and that in the Homeric age he had advanced to the imperfect discrimination of red or yellow, but no further, green of grass and foliage or the blue of the sky being never once mentioned. Mr. Axon, at the British Association meeting of last year, says that this theory depends only upon philological evidence. The weak part of such an argument is that it may confuse mere porerty of nomenclature with defective perception. In several instances this danger has been shown to be real. As far back as the stone age there is evidence of the existence of the color sense. He states that the color-vocabulary of the English gipsies is limited to green, black, red and white; but gives evidence that there is no definite relation between their color-perception and color-nomenclature.

It is curious, however, to learn that woman is not afllicted with color blindness to the same extent as the other sex. A cause is suggested in their greater attention to colors in dress decoration. Everything points to the desirability of instructing our young pupils in the accurate perception and naming of colors. If there has been any development of the color sense within historic times, attention to its education in all our primary schools must induce still more rapid pro. gress in perfecting a very important human faculty, and if not, they will at least gain the adrantage of having a language expressive of such color perceptions as they are endowed with.

## Scholarship as a Preparation for Teaching.

We are anxious that it should be clearly understood that this subject is not selected for the purpose of discussing the relative merits of scholarship and pedagogic training, or in any way instituting a comparison between them. No one is more deeply impressed than we with the importance to every teacher, and especially to those who parpose making teaching the business of their lives, of informing themselves of the results of the experience of those who have been most successful in the profession, and of the investigations of those educational enthusiasts who, to an untiring zeal in the prosecation of scholastic work, have added an ingenuity and fertility of resource, a patience and persererance, and a sobriety of judgment and power of generalization unsurpassed by many of the most noted workers in other departments of mental activity. Every province has its normal school, in which the discussion of principles and methods is intimately and wisely conjoined with their practical application to the business of the claseroom; and thus the student-teacher enters upon the duties of his profession equipped in some degree for their discharge, and with open and intelligent mind, prepared to modify and adapt the instruction of the lecture-room to the peculiar circumstances in which he is placed. And the result has upon the whole been satisfactory. There has been a gratifying advance in the tone and character of the schools, and the community at large has no doubt felt the benign and humanizing influence. But there are mutterings of dissatisfaction which are becoming articulate on every hand, not confined to these Provinces, or to the Dominion of Canada, but already loud-voiced and clear-toned in the United States and Great Britain. There, as here, fault is found with the inadequacy of of the curriculum of the school to meet modern wauts, but chiefly because the education too frequently provided in them is unworthy of the name. And we are not at all surprised that enlightened public men, literary men, and the "men of light and leading" in the profession itself, have poured forth the phials of their contempt upon the modern system, of which cram is the most striking feature, and have sought to overwhelm it under a down-pour of denuuciation, sarcasm and invective.
The demand for thoroughly educated men as teachers does not necessarily imply a condemnation of the work which has been done in the Normal School, or an expression of opinion that scholarship is paramount, and theoretical and practical training of secondary importance. It expresses the conviction that true education can only be obtained from one
who is himself truly educated. He may or he may not have had a course of training in a normal school; he may be but little acquainted with the history and development of systems of education, but his mind is disciplined, his acquirements are varied and accurate, his sympathies and tastes are literary, and his manners and habits bear the impress of culture. And, if to these he superadds an enthusiastic temperament, high character, singleness of purpose, sound jadgment, and a readiness and clearness of expression, he possesses the chief attributes of a great teacher.
To provide such by any system of training is clearly beyond the power of either normal school or college. Teachers, like poets, are born, not made. And as there are many pleasing verse makers who, although they will never be numbered among the sacred few, contribute by their compositions to the happiness and instruction of mankind, so it will ever happen that the vast majority of those who choose teaching as their profession, be they useful and perhaps distinguished in their day, will never attain to the high ideal we have formed of the great teacher. The educational institutions from which proceeds the great body of our teachers can only avail themselves of the instrumentalities within their reach, and make the most of the conditions in which they are placed. The opportunities for what is properly normal school work, and the appliances at the command of the skilful instructor in pedagogics, in the best equipped of our normal schools, are perhaps as good as can be expected in present circumstances. But what shall we say of the department of scholarship, as distinguished from that of professional training? Are the instructors in English, mathematics, science, and classics, so satisfied with the results which are obtained during the short time that the students are under their care, that with confidence they can recommend them as teachers of these subjects? Have they found their students on matriculation in such a state of preparedness that they can, with the hope of success, enter upon studies appropriate to those who intend to teach? And do they observe in them, as the outcome of their class and home work, a consciousness of their powers and a perception of how to exercise them, and that influence upon character to which, above all, we look, by their instrumentality, fur the elevation of the morals of the community?

We greatly fear that an unqualified reply, in the affirmative, cannot be offered to these questions. The very presence of a scholarship department in normal schools, is in itself an evidence that the studentteachers need instruction in the subjects which they will have to teach in their schools. And even if the students were much better prepared on entering
than they are, and were able to satisfy the demands of the department of education, which it makes from candidates for the office of teacher, it would prove of incalculable benefit for them to be under the training of men who are competent to instruct them how to systematize their knowledge, and who, by their own lessons-model lessons they ought to be-will show them how to present a subject to a class with greatest clearness, accuracr, and force. But since it is confessed that students on entering the normal school require to be educated, as well as trained, and since for all practical purposes the latter is useless without the former, except for very elementary work, and because we believe that the better educated a man is the more highly will he appreciate and the more thoroughly will he protit by professional training, the necessity for an efficient scholarship department is absolute and imperative.
That the results may be commensurate with the importance of the object which is aimed at, there are. manifestly, certain conditions which must be fulfilled. In the first place there should be a stringent test applied to erery applicant for admission. No one should enter the classes who had not satisfied the competent authority, the Board of Education, or the principal of the normar school, that he was entitled to a license of the lowest grade. By this means the normal school would be rid of the drudgery, too often imposed upon it, of preparing students, in their school work, for this class-a duty which ought undoubtealy to be performed with credit by the better class of schools throughout the country. It would, moreorer, preclude the possibility of the unseemly rivalry, in ordinary school work, which often exists between the normal and other schools, and leave more time at the disposal of the principal of the normal school for higher academical work and practical training.
Secondly, there ought to be sufficient time for the accomplishment of the studies which are undertaken. If the students who enter the normal school were well taught-if, instead of being drilled, they were intel. ligently trained to use their faculties; if their intellectual possessions, instead of bearing the impress of crudity, haste, and carelessness, were characterized by thoroughness of acquisition and clearness of comprehension, much time and labor would be sared. It is true that during the last ten years great improvement has been effected in this matter-the energy, self-derotion, and intelligence of the teachers who, during these years, have prepared the students to enter the normal school, have borne good fruit. But the multiplicity of detail in a country school, and the diversity of elementary matter, preclude all oppor-
tunity for individual training, while the hurry and impatience of such as wish to enter the normal school,
the their intermittent attendance and ineyuality of advancement, constitute a great but not insuperable obstacle to successful preparation. L'nfortunately, this turbulent haste is carried with them to the normal school. They work hard, they are painstaking and regular in their attendance, but the amount of work to be done by them is so great that they have little opportunity to think-their whole interest is centered upon the forthoming examination, and their whole anxiety to gain a license. How difficult, therefore, in such circumstances, to do what the teacher regards satisfactory work: He purposes not only to extend the bounds of the student's knowledge, but to train him to habits of accuracy and system, to lead him from results to the causes which, in their operation, produced them, and to impress upou him the preeminence of the mind over the materals with which it deals. Time, and intellectual calmuess, are indispensable to the full attainment of these ends. And if these conditions are not forthooming, what then: The alternative is grave and startling, and vet it is one which is not only wewed with unconcern by some, but unacknowledged, or openly professed, is adopted by others as their mode of procedure. ('ram in education is the greatest and most fatal of modern shams. None of the prevailing vices in teaching has been so frequently canrassed or more heartily and deservedly condemned. It has bound up in it, or in some way associated with it, almost every fault of modern teaching. The teacher who is what is termed a good drill. is in most cases merely a good crammer, whose aim is, by iteration and pressure of rarious kinds, to force facts upon the memories of his pupils, instead of arousing their interest and winning their sympathies. But we must be careful not to make the teacher solely responsible for this state of matters. In the first place, it must undonbtedly be attributed, in part, to the impratience of the young people of the present time, who refuse to submit to what they call the slower and antiquated methods of instruction of their fathers' day, and readily welcome those which promise to lead them, by shorter and pleasanter courses, to equally satisfactory results. And, in the second place, to the crowding into the course of studies of almost every imarinable subject, which distracts the attention of the pupil, without affording him relief, and bewilders and perplexes the teacher as he skips from one lesson to another, and rapidly effaces the impressions which he had previously made. But perhaps the most potent influence at work, accelerating and encouraging this deterioration, is the system of examination which meets the pupil at
every stage of his progress through school life, and bars every step he takes through college or normal school. Some test there must be, but we emphatically call in question the satisfactoriness of examinations as they are at present conducted. We hold, that as a rule the most important part of the teacher's work is not touched at all. The moral influence of the teacher upon his class cannot be gauged, and their intellectual training is but seldom put to the proof by the questions set in examination papers. Most of them are mere appeals to the memory. A good examiner is even harder to find than a good teacher. Many of those whose duty it is to set examination papers are deplorably ignorant of the first principles upon which the questions ought to be constructed, and if they have the requisite scholarship and experience as educators, they fail to make it apparent by the questions which they propose. The consequences are disastrous to all sound and true teaching. Study, under these circumstances, is for the most part not pursued for the purpose of securing the mental equipment which shall best enable its possessor to play his part in life, but with a view to obtain high marks at an examination.

How, under such conditions, cau scholarship flourish? We question whether it would not be better for true scholastic ends that examinations were abolished altogether. Manifestly under the constriction of the present system true education is threatened with extinction, or at any rate with paralysis, and it becomes the duty of all who are interested in the conservation of education as the most powerful instrument in the advancement of mankind, to see to it that reform is immediate and thorough. Let such a test be applied to educational work as shall exercise an influence in the direction of culture, tend to discover and cultivate the individuality of the student, and call into exercise and train him to the use of all his powers; neither overwhelm him under a mass of work nor push him against time, but enable him to assimilate his acquisitions, lend confidence to him from a consciousness of the possession of strength and skill from unremitting discipline. Under these conditions scholarship is possible.

If the teacher would succeed he must be well acquainted with the subjects which he professes to teach. The lowest class of teacher has important functions to perform, and that he may do that with efficiency he must be able to read and spell well, must be a good arithmetician and English scholar, have a fair acquaintance with geography and history, and be tolerably expert with the chalk on the blackboard. At first sight these acquirements may seem limited, but on examination much more is involved
than is evident on the surface. To be a good reader, which is a rare accomplishment, besides requiring a good and cultivated voice, clear articulation and correct emphasis, necessitates a perfect understanding of the passage, and such a mastery of the voice that by tone and inflection that meaning may be expressed. And how bald and uninteresting would a lesson in geography or history be if the acquirements of the teacher in these branches of knowledge were bounded by what he is expected to convey to his pupils! Nor need we say that, to teach the elements of English grammar and composition with success, greater familiarity with the structure of the language and the principles of composition is requisite than would at first be supposed to be necessary. The elementary teacher, therefore, must not only be competent to in. struct in the first principles and early practice of the subjects above mentioned, but inspire his pupils with zeal in the pursuit of knowledge, arouse their ambition, and cherish such impulses to higher and better things as it may be his good fortune to communicate.

If we are not unreasonable in the statement which we have made of what we ought fairly to expect of the lower class of teachers, it becomes a matter of tolerable simplicity to express the requirements of those members of the profession who occupy positions of greater responsibility and from whom more striking results are expected. From the posts they fill as second or first-class teachers they complete the education of the great mass of the boys and girls of the country, prepare stadents to enter the normal school, and the latter at any rate ought to be qualified to provide the elementary instruction necessary for matriculation at any of the colleges in these provinces. Surely, therefore, we shall not be making an unwarrantable demand upon them, if we express ourselves respecting their equipment, in terms somewhat commensurate with the importance of the duties they undertake to perform. On them, more than any other section of the profession, depends the growth of the intelligence of the country, and therefore it is all the more incumbent upon those who are responsible for their preparation to see that only such men are certified as competent, who by their qualifications of accomplishment, character and skill as teachers, are best fitted to advance that most desirable end.

These teachers ought to be better fitted than those of a lower grade to undertake the management of classes in the branches of an ordinary English education. They ought also to be sufficiently acquainted with Latin, French, mathematics and science to lay a good and solid foundation in these subjects upon
which afterwards a substantial superstructure may be safely reared. That these results may be reached, it is not sufficient that a certain amount of time has been spent or a certain allotted space traversed by the teacher, but he has a clear understanding of what he has done and has the gift of placing lucidly before the minds of others what is manifest to himself. We know that it is a common belief that some men may comprehend a process, or even discorer one for themselres, and yet fail to make it evident to others. But it occurs very seldom. If a man has ability to follow or discorer the rarious steps of the reasoning by which a conclusion is reached, he will have ingenuity sufficient to enable him to make himself comprehensible to the intelligence of others. The fact is, that in all situations in which one man has to deal with the minds of others, the first, second and third requisite is that he has a perfect grasp of the subject himself, and then in proportion to the intensity of his own conception of it will be the lucidity and force of his presentation.

But what shall we say of those unfortunate men to whom the subjects of which they know least offer the greatest attraction? The branches of an English education, in the teaching of which they might be fairly successful, do not prove sufficiently inviting to conciliste their undirided affection, but Latin or mathematics, of which they know almost nothing, irresistibly fascinates them. Dabblers in the latter, they waste their time and teach nothing. If they have plausibility enough they may deceive their pupils and impose upon their parents by the force of their pretensions. But let the scholars be subjected to independent examination, let their acquirements be put to the test and the utter worthlessness of this mode of procedure becomes painfully conspicuous. The time of the pupils has been sacrificed on the altar of vanity, habits of work have been formed which are very difficult to eradicate, and a strong and abiding distaste for certain studies acquired, which it is perhaps impossible to remedy. Such men as these ought not to be in the profession, but, if they cannot be weeded out of it, they should be subjected to such a system of supervision, that they will be compelled to teach those subjects and those subjects only, which from previous preparation and natural aptitude they are qualified to teach.
There is still great difference of opinion as to the branches of knowledge which ought to constitute the curriculum of the higher schools in the country, and, therefore, to some extent, determine the education which teachers ought to receive. There is no question respecting those which are generally known as the English branches. The battle-ground has been more
or less confined to the admission or rejection of Latin and perhaps Greek, and the extent to which elementary science ought to become a subject of study. We do not purpose entering upon the discussion of this much-debated question, but content ourselves with saying that we hold that the thorough study of the classical languages is not incompatible with a successful prosecution of scientitic instruction. Some students may have a strong lingnistic proclivity, whereas others, by taste and talent, have greater aptitude for science, and, therefore, we consider that the curriculum should include both. And as long as the doors of the university and the profession of law and medicine are closed against those who do not possess a certain hnowledge of these languages, it is clear that they must be taught in the higher schools.

And what better instrument can be put into the hands of our teachers, or what better discipline can they undergo than that of systematic study of these languages? The training in acuracy, even if there were no other advantage, would alone repay the teacher for the time and care which he bestowed apon them. But he will always find that the reflex influence of the Latin studies upon the work in the English class is conspicuous. The pupils grapple with the difficulties of the language with greater ease and intelligence, possess a more extensive vocabulary, and greater facility in the selection of words, and have minds stored with materials for reflection, and practised in observing the conciseness, elegance and vigor which distinguish the style of the great Latin authors.
But we are not disposed to quarrel with the means by which the end is to be accomplished. The object of every true educator is to enrich the minds of his pupils with knowledge and to evoke and train to greatest perfection the faculties with which they have been gifted. To us it does not much matter what the instrument may be, provided the result is attained. But it is clear to everyone that, as we cannot justly condemn an implement which has failed in the hands of a bungler, so an instrument of education is not to be rejected, although it does not justify the expectations of its adrocates, when employed by an ignorant and unskilful teacher. Classics may be an admirable educative agency, and science may be equally so, but both become absolutely worthless when entrusted $w$ ignorance and incompetency. And, therefore, whether classics or sciende be the means, the teacher's scholarship must be unquestionable, his mentul discipline assured, and his skill as an educator undoubted.

The time was, and that not so very long ago, when
the occupation of the teacher was pursued in obscurity, and when, in the estimation of the general public, the insignificance which characterized him and his work fitted them only for oblivion. But all this is now much changed. No one now complains of waut of publicity, or that he or it is undervalued by those members of the community whose good opinion is worth having. States are now vying with each other in their efforts to educate their people. The example of Germany has awakened the rest of Europe to exertion, and educationists proceed thither from all parts of the world to study her system and methods. Professor Hoffman, to whom the late emperor sent a patent of nobility on his birthday, once said to an eniment English minister of education, "That whatever the Germans were in arts or arms, they had accomplished all through their system of education." But a system is not enough. There must be men thoroughly qualified to work it out-men, gifted with the ability to quicken and enlarge the minds of their pupils, and without impairing the native virility of their natures, to stimulate their intellectual alertuess and strengthen their moral force-men penetrated with an exalted professional spirit, whose minds are cultured, and whose hearts are sound-men of force of character, and of accurate and liberal scholarship.

The government of India is taking a renarkable new departure in reference to education. With a view of extending its benefits throughout the country it has resolved that, wherever possible, government schools shall be substituted for private ones, and that the educational staff in these schools shall be strengthened by the engagement of specialists in Great Britain. Technical education is also very fully dealt with in the resolution, and the very sensible suggestion is made in reference to this matter that, as a beginning, an industrial survey should be made of each province. We at home incur much wasteful expenditure annually by the overlapping of our educational organizations and institutions, and an industrial survey would be of no mea: utility to us as a preliminary to a well planned scheme of technical instruction.
But the most pregnant and striking proposal of the Indian government is that moral training should be provided by a moral text-book founded on natural religion. Having regard to the solvent action of western ideas on the old beliefs of India, and the great moral dangers attending a period when the intellectual portion of a nation shifts its religious moorings without finding anchorage elsewhere, this action of the Indian government is as wise as it is

## FERNDALE SCHOOL

No. XVI.-The Orthoptera.


Rociy Mountain Locust,
(Caloptenus spretus) depositing its eggs.
T. Did you ever see the insect sketched here?

Chores. Yes. It is our grasshopper.
T. Not altogether. You have made two mistakes. It is not exactly the same as our insect, nor is it properly called the grasshopper.
S. Some people call them locusts.
T. Very good. Our sketch is of the locust which plays such havoc in Canada and the United States, on this side of the Rocky Mountains. Its scientific name means the Hateful Locust.
S. It is very mnch like ours.
T. Well, you have specimens of our own which you have collected for this lesson. I may tell you that there is but little difference in color. The principal difference is in the wing covers.
S. The wing covers of the Hateful Locust are longer, according to the drawing.
T. Correct. Any other difference?
S. The end of the wing covers of the Hateful Locust is rounder. Our grasshopper-I mean our locust--has the end sloping, instead of rounded, just as if one-quarter of the length of the Hateful Locust's wings were cut off with the scissors, slanting, instead of square across.

Chorus. What is the name of our locust?
T. The red-legged locust is the translation of its scientific name. Is the name correct?
S. Yes. And there is a row of fine teeth on the sides of these long, red, jumping hind legs.
T. You are right. And if you can only watch them cautiously when they are at home you can see the use to which they put them. They draw this toothed leg rapidly against the stiff veins of their wing covers, as a bow is drawn over violin strings. This is how they produce their part of the music which can now be heard in the fields. How many have noticed the insect chorus in the fields?
S. (All hands up.) There is a constant roar of sounds going on in every direction without a single stop.
T. Is that the way you talk of the autumnal concert of the orthoptera?
S. Is all the sound made by the locusts?
T. By no means. I said orthoptera. How do you know that the locust is an orthopter?
S. By its straight wing covers.
T. Well, that is one point. Examine the flying wings. Raise first the wing covers at right angles to the bodr, then expand the under wings.
S. The flying wings are folded up like a fan. They are nearly transparent, with a greenish tint near the body, and are netted with fine brown lines.
T. Has any scholar a different kind?
S. This locust is over an inch and a half long, is of a dark ash brown color, with dusky spots, and its flying wings, when expanded, are black, with a yellow border. When it flies in the hot sun it makes a rustling noise.
T. Very good. You hare captured the Carolina Locust. There are several species of them. Some are remarkable for the crackling, snapping noise they make when flying by means of the edges of their wings against their wing covers. The locusts form only one family of the orthoptera. The second family is properly called the grasshoppers.
S. How would you know them?
T. Find one first. I may tell you, howerer, that they are mostly of a grass-green color, with antennæ longer than their bodies. (The antennæ of the locusts are always shorter than their bodies.) They have four joints in their feet; (the locusts only three). Their wing covers are not so roof-like in position as in the locust.
S. Oh, yes. I caught one on a bush, while it was singing, zeep, zeep, zeep-fiddling, I suppose.
T. Fiddling, or harping; shrilling is the proper term. The insect raises its wing covers and appears to scratch their bases against each other when producing the sound. Some of these tree or shrub grasshoppers are called Katydids, from the stridulation or shrilling noise made by the male.
" I sit among the leaves here when evening zephyrs sigh.
And those that listen to my voice, I love to mystify:
I never tell them all I know, altho" I'm often bid,
I laugh at curiosity, and chirrup, "Katy-did."
T. But there is a third family, the crichet..
S. We have one about our chimney, and it makes a very shrill noise.
T. That is the domestic cricket. It came over from the old country with our forefathers. The shrilling is done by the male. He raises the fore wings or covers and rubs a prominent vein in them, which is covered with very fine teeth, over the sur-
face of the under wings. These wings and their veins are as clastic and sonorous as a little drum, hence the loudness of the sound.
S. There are lots of large crickets, and smaller ones, everywhere in the fields.
T. Very good. The large black one is called the neglected cricitet, by the entomologists. There is also a common and rather mischierous white cricket, called the shomy cricket, which young people might mistake for a kind of moth. It injures some usefal plants by boring into the twigs to deposit its eggs in the central pith.
I will mention a fourth family, the cockroaches. These are the more important. An ear-uig, and a spectre or walking-xtich, belonging to a fifth and sixth family, respectively, are known to be in this country.
S. How many species of each different family of the orthoptera are known to be in Canada? I suppose each kind takes up a different part in the autumn open-air field concert?
T. Over ${ }^{40}$ different species of locusts; 11 grasshoppers; 8 crickets; 6 cockroaches; 1 spectre, and 1 ear-wig. Let us see how many different kinds we can tind in our school section.
S. Are there a larva and pupa stage in the orthoptera?
T. There are; but both the laria and pupa are very much like the imago, only smaller, and without the fully developed wings. They do not change their forms so completely as nearly all the other classes of insects do.

I will read you some other day something about the work of the Hateful Locust.

## The Hatefcl Locest.

Prof. Riley, the leading entomologist of the United States, thus describes the manner in which it lays its eggs. The figure at the beginning of the Ferndale lesson represents the different positions. "The female when about to lay her eggs, forces a hole in the ground by means of the two horny valses which open and shat at the tip of her abdomen, and which, from their peculiar structure, are admirably fitted for the purpose. With the valres closed she pushes the tips in the ground, and by a series of muscular efforts and the continued opening and shutting of the valves, she drills a hole until, in a few minutes (the time varying with the nature of the soil) the whole abdomen is buried, the tips reaching an inch or more below the surface by means of great distention. Now, with hind legs hoisted straight above the back she commences ovipositing, the eggs being voided in a pale, glistening and glutinous fluid which holds then together and binds them into a log, cylindrical
pod, covered with particles of earth which adhere to it. When fresh the whole mass is soft and moist, but it soon acquires a firm consistency. It is often as long as the abdomen, and usually lies in a curved or slanting position. The eggs which compose this mass are laid side by side to the number of from thirty to one hundred, according to the size of the mass.

An Arabian fable represents the old world locust as saying to Mahomet: We are the army of the Great God; we produce ninety-nine eggs; if the hundred were completed we should consume the whole earth and all that is in it."

In the island of Cyprus, as well as elsewhere, the government has been endeavoring to exterminate the insect, by paying so much for each bag of locust's egg pods which are then destroyed. Sometimes the land is plowed down to bury the egg masses too deep to produce living insects. But there are vast tracts of waste lands in the world where no plows can be expected to draw a furrow.

Terrible famines have been caused by the locust, especially in ancient times, when the means of transport and communication between distant countries were undeveloped. Turn up to the prophecy of Joel, chap. II., 2-11, and read what is considered one of the most correct and sublime descriptions of one of these visitations. While life has not been lost to any extent in America through them, they have, nevertheless, destroyed millions of dollars worth of property.
We select as a description of a modern visitation of locusts, a letter from a lady in Butler County, Nebraska, July, 1874:
"The low hang clouds have dropped their garnered fulness down. But alas ! and alack ! they were not the long-looked for rain clouds, but grasshoppers. As I told you before, they passed over on the 23rd, only a few alighting; but a stroug south-west wind on the 24th brought back countless millions; and on the 25th their numbers were fearful to contemplate. They would rise in the air when the sun shone hot, but as it grew cooler they came down like the wolf on the fold. They settled like huge swarms of bees on every living thing. Fields of corn which hid beeu untouched before were now stripped of tassel and blade. A field of early corn was being eaten so fast that the girls went to save a few ears, instead of going to visit a sick school-mate according to promise. Trees were so loaded with the pests, that those four and five feet high bent down until their tops tonched the ground, and in some instances broke off. For three dreadful hours they dashed against the house like hail. So many come in at door and windows that every aperture was closed; but not until they were so thick on the windows that we were forced to make a business of slaying. The 22th of July will be remembered by the citizens of this and some other counties as the dark day, when desolation and derastation stared us in the face."

## THE SCHOOL ROOM.

Lessons on Color.
(For the Teacher.)
The teacher must remember that in these lessons, when we speak of mixing colors, we mean the mixing of pigments, or colored matter. The mixing of spectrum colors, that is of colored lights, will in many cases produce very different results. By mixing blue and yellow paints, for instance, we make a green. But a mixture of pure blue and yellow light gives us a white. In the mixing of paints, etc., we must practically consider red, yellow, and blue, to be the primary colors. In combining colored lights we are equally forced to consider red, green, and blue, as the primaries from which all other colors may be produced. Accurately speaking, we do not always mix colors when we mix pigments. Absorption of color takes place according to very definite laws in the mixture of paints, so that the convenient nomenclature of color combination, with the ordinary artist, is sometimes far astray from the accurate statements of the physicist. The following table will illustrate:

| CoLors Cowbined. |
| :--- | :--- | :--- |$\quad$| Result by Mixture of |
| :--- |
| Light. |$\quad$| Result by Mixture of |
| :--- |
| certain Paints. |

When we use the word colors, then, in the primary school-room, we understand it to mean, not colored light-the true color-but colored matter, which when mixed together does not give us exactly the colors of each before combination. Thus the real colors, yellow and blue combined, gives white. But yellow and blue crayon rubbed together gives a green. Therefore, it follows that when the colored matter was combined, all the colors of the spectrum which produced white were absorbed, except the green. We say, then, yellow and blue make green-meaning yellow and blue paint makes a green paint. For a short explanation of the nature of color see Gage's Elements of Physics, in our high school course. For a full and most satisfactory exposition, see Rood's Modern Chromatics.

## Lessons for Primary Classes-Secondary Colors.

5. Orange.
(a) Mix red and yellow by means of colored chalk crayons on the board. Draw a square to say twelve inches. Draw red lines vertically in it, as far apart as the breadth of the lines. Then draw yellow lines between them. Finally blend the two
colors by rubbing them horizontally with the tip of the finger. It is orange.
(b) Call up a section of the class to fill each a four inch square with orange made from a red and yellow crayon.
(c) Call up another section of the class when this is done to till in a similar adjacent square with an orange crayon and compare the colors.
(d) Let them point out all the orange colors to be seen about the schoolroom.
(e) Let them mention all the orange things they can remember to have seen.

> 6. Green.
(a) Combine yellow and blue in a large square before the class as in the previous case.
(b) Call up a different section of the class to repeat it in four inch squares.
(c) Another section fills adjacent squares with green crayon, for comparison, as before.
(d) Point out all the greens risible about the school-room.
(e) Mention green things from memory.

$$
\therefore \text { Purple. }
$$

(a) Repeat as before, with red and blue crayons.
(b) Repest as before, with a still different section of the class, until all hare had their turn at the four inch purple squares.
(c) Repeat as before, making four inch squares of purple crayon, for comparison.
(d) Name purple objects in sight.
(e) Name purple objects from memory.
8. Review.

Draw six four inch squares in a band thus:

| 1 | 2 | 3 | 4 | 5 | 6 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Red. | Orange. | Yellow. | Green. | Blue. | Purple. |

on several boards around the room.
(a) Call up a pupil to each, with a red crayon, to draw rertical lines, separated only by their own breadth, in squares 1,2 and 6.
(b) Call up another section next, with yellow crayons, to draw similar lines in 2, 3 and 4.
(c) Call up another section, with blue crayons, to draw similar lines in 4,5 and 6 .
(d) Call up another section to fill in the blank lines of the primary colors with the same colors.
(e) Mention the colors in each square, beginning with red, (1, 3 and 5).
$(f)$ Blend the colors in each square, name them, tell which are composite and which are primary.

## INTERPROVINCIAL CONVENTION.

## (continued from september number.)

On Thursday morning, July 19th, the Convention met in sections:

Section A.- Vormal schools. The principals of the normal schools of each province met, and after an informal discussion considered the papers read, and then adjourned to meet with other sections.

Section B.-Inspectors. This section met at the Grammar School room, Oddfellows' Hall. Inspector Arbuckle, of P. F. Island, was elected chairman, and Inspector I. B. Oakes, A. M., Secretary.

Inspector Condon, of Halifax, read the first paper on "The Inspector a Necessary Factor in a Public school system." The following is an abstract:

He said he would speak plainly from an experience as Inspector for seventeen years. It is sometimes asked by a certain class of persons: Is a system of school inspection necessary: In view of the large amount of public funds expended on education it is of the first moment that this large expenditure should result in the best fruit possible. This can not be realized without an intelligent and faithful staff of Inspectors. In many sections, year after year passes while the school is sorely needing, school appliances. Without these the best efforts of the teacher are rendered almost fruitless, when perhaps 810 worth of apparatus would remedy the defect. The Inspector must urge the necessity and see that apparatus is supplied. He is sometimes unable to effect a supply. There is urgent need that the Inspector have a larger discretion and authority in this matter. He should be a guardian of the proper expenditure of the public funds.

Again, there are many inefficient teachers and timeservers. As a rule the Board of Trustees cannot convert such. Hence the need of a discreet Inspector, who may faithfully point out to such teachers their failure, and if they do not reform the Inspector must plainly report and recommend penalties if necessary.

Again, we have a course of instruction to which it is important that schools faithfully adhere. Unless the Inspector keep a close supervision, many schools would overlook and override important parts and features of the prescribed course of study.

Mr. Condon farored the one term plan, extending over the school year. His address was greeted with applause, and he was followed by Inspector Mersereau in a few brief but spirited words endorsing the points made.

Inspector Roscoe, of Wolfville, N. S., then addressed the section. He pointed out the differences between the duties of Inspectors in Nova Scotia and
those of New Brunswick. In Nova Scotia the Inspector has to disburse the county fund and the provincial grant. He also has to meet the County Boards of Commissioners twice or three times a year. He has also to conduct the teachers' examinations in his own counties each year. Mr. Roscoe pointed out the duties of an Inspector. He must look closely after the school houses. Many poor school houses are liable to exist year after year. He must notify, and if necessary afterwards, condemn, and compel the building of a new house. He found many schools without proper maps, blackboards and other necessary appliances.

After the Inspector has given due notice, and the Trustees fail to supply, he should have the authority to purchase the needed appliances and deduct the cost from the next county fund. Again, respecting the internal work of the school-room, many teachers need stimulus and correction. The classification of the pupils, and the studies, is often very faulty. The Inspector must point out the defects, and if his advice is not heeded he should report the case and make judicious recommendations. Again, he should keep his eye on school methods and seek to point out better methods where necessary, and see that there is a relation between method and educational principles. He must carefully guard the quality of the oral instruction. He generally inspected two schools daily; sometimes he spent the whole day in one school.

Inspector Munro, of Yarmouth, said it might seem that the discussion was in the nature of a defence of the official position of the Inspectors. He said in his field he had to disburse over $\$ 12,000$ each half year. Five per cent commission on this would amount to 8600. The Inspector received no consideration on this work, and yet he was required to give bonds. Church funds lose about ten per cent on commissions before they reach their destination, and no sureties are required. This view ought to modify the popular judgment respecting the emoluments of the Inspector. He referred to the need the Inspector often found for correcting the position of classes in the school-room, correcting the pronunciations of words and habits of pupils, etc., etc.

Inspector Patillo, of Bridgewater, N. S., said he was chiefly drawn to this convention on account of the inspectoral section. The experiences of former speakers had been his. He had organized over seventy new districts since he became Inspector. He painted a picture of a typical backwoods district where the majority could neither read nor write. He always felt the necessity of testing for himself personally the character of the school. Sometimes he required the teacher to conduct exercises in his presence. He
found great need of school apparatus. He often carried maps with him to districts and trusted the Trustees for payment. He found sometimes ratepayers who saw no need of inspection. He had invited such persons to the school, and afterwards they acknowledged that they had not hitherto understood the character and necessity of the Inspector's work. Sometimes the politician declined an invitation to attend the school during inspection, and afterwards, in the legislative hall, said he did not believe in the need of inspection. He agreed with former speakers as to the need of more discretion on the part of Inspectors in compelling sapplies and reporting upon inefficient teachers, with recommendations. He thought the teacher's disposition and temper should be tested, if possible, before being licensed.

Dr. Fitch, of England, at the request of the section addressed the Inspectors. He referred to the matter of writing, to which allusion had been made. There was no need of any fixed method of teaching. Of different methods the teacher was free to choose any he may prefer.
In answer to Supervisor McKay, Dr. Fitch said the Inspector's power in stimulating idle or inefficient teachers in England depended largely on the Inspector's detailed report. In this he pointed out the defects, and classified the pupils passing the examination, and the grant to the teacher or Board was dependent upon the results of the examination as detailed in the Inspector's report. The financial result being dependent upon the scholastic result, was a very powerful stimulant and corrective. The managers and teachers of the school chose certain specific subjects for certain classes, and the Inspector examines on these subjects along with the necessary general subjects. The Inspector is required to visit only once a year, on a prescribed day. The teacher is the servant of the local Board, is engaged by the Board, retained by the Board, is responsible to the Board, and can be dismissed by the Board. The teacher is not dismissed without just cause.
An Inspector in England bas a district embracing about fifty thousand pupils, and has two or three assistants. He makes one visit a year, and visits about one hundred and twenty schools a year. The Chief Inspector receives $£ 5,000$ a year. Subordinate inspectors receive $£ 500$ and upwards. His travelling expenses are paid by the government. Schools are kept in operation during the entire year.
Superintendent Montgomery, of P. E. Island, addressed the section, dealing with the mode of support of the teacher and the school in that Province. He showed how largely the Inspector was backed up by the education department, and stated his conviction
that in Nors Scotia the education department should disburse the prorincial grant and county fund.

Chief superintendent Crocket expressed his conviction that, in the public interest, the heary burdens laid upon the Inspectors should be lightened. He classified their duties in each district, and showed how wide and important they were, requiring more time for their proper discharge than is now afforded.
Inspector Carter, of St. John, read a paper on the relation of the Inspector to the teacher and the district. He urged as a remedy for the present decreasing salaries, greater permanence in the profession, to be obtained eather by the one term in the rear srstem, or an added compulsory clause in the law. He urged the importance of more exact grading. and the abolition of the marking and prize system. He spoke of the value of a time-table, closely adhered to, as well as the importance of following closely the course of instruction, and the grading of mixed schools only at the end of each term.
Inspector Snith, of Petitcodiac, next addressed the section. He referred to his pleasure in listening to the experiences of the Nova Scotia Inspectors, which he found were identical with his own, and therefore a recital of his own seemed less necessary. He referred to a typical poor school in his district, and told how a risit thereto depressed his spirits. He recited other very amusing experiences and incidents.
Inspector Merserean referred to the fact that the same time-table is often kept term after term, rather as an article of ornament than of use. He explained his plan of having time-tables renewed. He referred to many wars by which the Inspector should help the teacher; he should seek to encourage and stimulate: he should also seek to derive much help from the examinations and personal experiences of the teacher. He conld help the educational interest much by encouraging the taking of educational papers, especially the Edtcational Review. He could do much by encouraging the holding of teachers' institutes. He should feel a fatherly interest in all the teachers and seek to help them in every way.
Ex-inspector McSwain read an interesting paper on "What may we do to make School Inspection more efficient?" He emphasized the value of frequent conferences of teachers upon the difficulties and methods of their work. The Inspector should be careful not to needlessly injure, by any indiscretion, the reputation of the teacher. He must guard against receiving false impressions of school or teacher from friends or foes. He must not, for the sake of gaining popularity, omit to point out and correct abuses. He must also be faithful in his reports to the educa-
tion department. He ought to be a man of wide knowledge and discretion.
Inspector Mclonald, of Antigonish, made a vigorous speech, setting forth many features of his work. He favored a twofold instead of a threefold support of schools-provincial and county, instead of provincial. county and district, as now. The general opmion prevailed that the Inspector should have some portion of his time for reading and study. As it now is he has no opportunity.
Chief superintendent Crockpt said while it.was desirable that teachers' salaries should be raised, the guvernment could scarcely be expected to raise the Provincial grant. There should be some organized effort to enlighten public opinion in the direction of an increase from the districts.

## OPENING OF THE UNION BAPTIST SEMINARY.

Thursday, the 2ith September, 1858, will be a redletter day among the Baptists of New Brunswick, for on that day was formerly opened at St. Martins, St. John Co., the Union Baptist Seminary. The guests, some five hundred in number, began to assemble at twelve o coloch.
Dinner was served at one o'clock in the dining hall, after which the building was inspected under the guidance of the superintendent and other officials.
At three oclock the chapel hall was crowded to overflowing. The chair was taken, in the absence of Mont. McDonald, Esc... President of the society, by Wm. Vaughan, Esq., ex-President, supported by $W_{m}$. Peters, Fsy., Vice-President.
After a few introductory remarks by the Chairman, prayer was offered by the Rev. Mr. Mellick. The Chairman then called on the Rev. Wm. F. Parker, pastor of the Saint Martins Baptist Church, who delivered an address of welcome on behalf of the inhabitants of Saint Martins to the teachers and students of the seminary. The officers and teachers were then introduced to the audience. Addresses were delivered by the Rev. I. E. Bill, I. D., the Nestor of the Baptist denomination in the Maritime Provinces, who gave a statement of the educational operations of the Baptists from their first undertaking in 1825 to the present day, and commended the present institution to the sympathy and support of the whole denomination.

Rev. Mr. Hartley, of Carleton, followed in an earnest appeal to the students who were present, to take the fullest advartage of the provisions made for their adrancement in the higher education. He also pressed upon the community in which the school was situated, and upon the whole membership of the two denominations, the necessity of rallying to the support
of those who had carried the burden of the work up to the present time.

Kev. C. Goodspeed, a former principal of the Fredericton Seminary, spoke of the responsibility which the new order of things laid upon teachers and students.

Addresses were also delivered by Rev. Prof. Kierstead, of Acadia College, C. A. Everett, Esq., St. John, Rev. W. J. Stewart, Portland, Dr. G. A. Hetherington and Wm. Peters, Esq., of St. John. The superintendent, Rev. J. A. Gordon, stated that the outlay on the building had exceeded $\$ 35,000$, of which amount $\$ 29,000$ had been paid to contractors, merchants and others. A sum of $\$ 10,000$ was yet required to complete the work. The current expenses of the year were placed at a further sum of $\$ 10,000$. He stated that seventy students had signified their intention to enter for the present term, of whom forty had already arrived.

The addresses were intergjersed with instrumental music by Miss Vaughan, and recitations. Tea was provided in the dining hall at 5.30 o'clock, after which the guests took their departure.

The staff consists of a superintendent, the Rev. J.A. Gordon; Principal, Rev. B. F. Simpson, A. M., B. D., teacher in classics, science and philosophy; Preceptress, Miss F. Thomas, teacher of English literature and elocution; second master, Geo. Downey, A. B., teacher of mathematics, history and geography; Miss Vaughan, teacher of instrumental music; J. C. Miles, Esq., F. R. C. A., teacher of drawing and painting; Miss Hutchins will take charge of classes in rocal culture.

The building is beautifully situated on a rising ground off the main street of St. Martins. It is built of brick on a stone foundation, three stories high, and a frontage of over 200 feet, and three wings extending back about 70 feet.

The fees will be about $\$ 140$ per annum for each pupil. This will include tuition, board and lodging. The spacious grounds attached to the building will afford ample opportunity to the students to attend to their physical development.

The wave length of red light is $\frac{1}{3800}$ of an inch; of yellow light $\frac{1}{410} 0 \pi$; of violet light about $\frac{1}{10} 0 \overline{0}$.
If white paper reflects 100 per cent of the light falling upon it, the blackest paper reflects about 5 per cent. A perfect black would be invisible as it would reflect no light.
Some cases have been observed where the eye has apparently little perception of anything except light and shade. The world would look like a picture in black and white to such a person.

## TEACHERS INSTITUTES.

The St. John County Teachers' Institute met on Thursday and Friday, September 27th and 28th. The Superintendent of Education was present on Friday and addressed the teachers. He urged them to study the history of education, in order to get a wider and juster view of their profession, and to see what those methods and practices are which have survived through centuries. Papers were read on drawing, music, and methods of teaching English. These gave rise to spirited discussions, in which the lady members of the Institute took an active part. Their remarks, especially, were of a practical character.

At the Westmorland County Teachers' Institute, on the 27th and 28th September, there was an excellent display of manual work from several of the schools throughout the county. Chief Superintendent Crocket was present on the first day and addressed the Institute. The work from Mr. Brittain's school, Petitcodiac, won deserved praise.

At the Charlotte County Teachers' Institute, on the 27 th and 28 th September, several interesting papers were read. Among the subjects discussed was Dr. Fitch's "Lectures on Teaching."

The Carleton County, N. B., Teachers' Institute will be held in Woodstock on Thursday and Friday, October 11th and 12th. There will be an exhibition of manual work from the schools of the county. The Superintendent of Education will be present and address a public meeting on the evening of October 11th. Other speakers are expected to address the meeting.

The Gloucester County, N. B., Teachers' Institute will assemble in the Grammar-school building, Bathurst, on Thursday, October 4th. Specimens of manual work from schools will be exhibited, and an interesting programme will be carried out, including a discussion on Payne's Science and Art of Education.

The twelfth annual meeting of the Albert County, N. B., Teachers' Institute will be held at Harvey, October 18th and 19th. There will be an exhibition of school work, and a public educational meeting on Thursday evening, October 18th, at 19 o'clock. The programme embraces a series of interesting and important subjects for discussion.

Northumberland County, N. B , Teachers' Institute meets on Thursday and Friday, October 18th and 19th. The Chief Supt. will be present and deliver an address.

The annual convention of the teachers of Inverness and Victoria counties，was held at Baddeck on sep－ tember 20th and $\because 1$ st．This association was organized ten years ago，and through the untiring zaal of In spector Gumn，its president，it has been the means of creating a great deal of enthusiasm and interest among the teaching fraternity．
This year there were six papers read on educational topics，all of which were both interesting and highly instructive．Especially would we mention the paper read hy Mr．D．Fraser，B．A．，of Picton town，who is now principal of the Baddeck Academy．Mr．Fraser＇s paper was entitled＂What Things are Really Worth Learning ；＂also a paper by Miss Mary J．Mclean，of Strathborne，on＂The Duties of Teachers．＂Surely， after such an excellent beginning，we will be looking out for more contributions from the lady teachers in the future．
During the last session the president directed the attention of all the teachers present to the Encol thonil heview，and in glowing terms spoke of the merits of that publication．He wished every teacher in the district to take it，and spuke of the possibility of getting every board of school trustees to subscribe for it also．Then it was moved by Mr．F．C．Coops， B．A．，and seconded by D．C．Mekay，that the con－ rention express their approval of the Entcatiosal Review．The motion was unanimously carried．The convention，which prored to be the most interesting one since the organization of the association，was then adjourned，to meet again in Whycocomagh，on the third Thursday and Friday of September， 1809.

D．C．McKar，
Sect $y$－Trensurer．

## SCHOOL AND COLLEGE．

Muxro Exhibitioners and Buraras．－At the matriculation examination of Dalhousie Unversity last month，the following were the successful compe－ titors for these fine prizes．The senior exhibitions and bursaries are competed for on entering the third year of the university course；the junior on entering the first year．Exhibitions are worth 830 ；bursaries 8200.

Senior Exhibitions．－Geo．W．Schurman，P．E．I．； T．J．McLeod，P．E．I．；D．F．Campbell，Pictou Co．， N．S．

Senior Bursaries．－Geo．O．Cogswell，Kings Co．， N．S．；Robert Grierson，Halifax；D．C．MacIntosh， Pictou Co．，N．S．；G．R．Rowlings，Halifas Co．，N． S．；E．Fulton，Stewiacke，N．S．；J．A．McKinnon， Cape Breton；E．B．Smith；D．O．McKay，Pictou Countr．

Tunion Frhibitions．－A．F．Machonald（1＇ictou Academy），Hopewill：K．（i．Webster（Yarmouth Academy）N．S：F．F．West（Prince of Wales Col－ hege）P．E．I．：Rad McNeill（Prince of Wales Col－ lege），P．F．I．：F．W．Bakin（1）ighy Academy），N．S．
Iunion Bursurics．－．1．R．Hill（Pictou Academy）， Five lilands，N．S．：I．B．Johnson（Pictou Academy）， （iramton，N：S：SarahE：Archibahd（Pictou Academy）， Sherbrowk，A．s．（ien．F．Jhanson（Picton Academy）， Stewiacke，A．s ：Jas A sutherland（Picton Academy）， River John；D．T．Mckay（Prince of Wales），P．E．I．； 1）A．MacIntosh（Pictou Academy），Cape Breton； A．Fullerton（Annapolis Academy），N．S．：A．J． Maclonald（Pictun Academy），（＇ape Breton；R．S． Campbell（Picton Academy），Tatamagouche．

Acama（ondeak．－A very interesting pamphlet of some sixty pages，entitled．．＂（ieneral Catalugue and Historical hecords of Acadia College，1833－1888，＂ has teen published in conpection with the jubilee celebration of this college．First，there is a history of the rise and progress of the college．Then lists of all its officers，and even of the class men of each year． From this later it will be seen how important a part Aculia has had in preparing the leading men of our country for the discharge of the duties of an influen－ tial citizenship．The calendar gives the number of students attending during the last year，as follows： Seniors，14：juniors，18：sophomores，23；freshmen， th；general，13．Total， 114.

The annual meeting of the Halifax Ladies＇College was held last month．The expenditure on capital account has been sto，ono．The number of pupils in all classes during the first year was 216 ．Receipts for tuition，84，int．3：3：for conservatory of music，各4，084，－ 40；for board，st，i？1．4i．The college has opened with nearly double the attendance at the beginning of the first year，and additional room for the con－ servatory hat had to be provided．The following directors for the ensuing year were elected：Wm． Crocket，superintendent Education，N．B．；Rev．Dr． Hacrae，St．John，M．B．；Rev．（ieo．McMillan，P．E． Island；Hon．I）．C．Fraser，New（ilaggow；Rev．Wm． Dawson，Cornwallis，N．S．；Rev．Robert Jaing，Hali－ fas；Adam Burns，Halifax；Rer．P．M．Morrison， Halifax；David McKeen，M．P．，Cape Breton；Hon． Wm．Ross，Halifax；Supervisor McKay，Halifax；Rer． Robert Murray，Halifax；Hon．C．H．Tupper，Minister of Marine and Fisheries；W．B．Ross，Advocate，Hali－ fax：Peter Ross，Halifax；Hon．S．H．Holmes，Halifax； Donald Montgomery，Superintendent Education，P． E．I．；Rer．Dr．Burns，John Doull，Prof．Leichti， H．G．Bauld，Halifas．

## PERSONAL NOTES.

Inspector Mersereau is visiting the schools in Gloucester County, N. B., this month.
Mr. N. W. Brown, late principal of the Milltown, N. B., high school, is at present on the collegiate school staff, Fredericton.

Mr. S. D. Alexander, recently of the superior school, Jacksonville, N. B., has been appointed to the principalship of the Milltown schools.

Mr. (i. R. Devitt, of the Portland high school, has been appointed English master of the St. John grammar school.

Mr. H. V. Bridges, A. M., of the collegiate school, Fredericton, has been appointed to the inspectorship, of York and Carleton Counties, N. B. There were eleven applicants for the position.

Miss Orr, of the Victoria school, St. John, is taking a partial course in kindergarten methods, under Miss Woodcock, of Truro, N. S.

Mr. D. W. Sutherland was one of only four successful candidates who passed the 1st B. examination in British Columbia. The esamination lasted nine full days. The reason why so few passed was that eight new subjects were added this summer, in order to grant life certificates. Mr. Sutherland is a graduate of Pictou academy, and a teacher of first-class abilities, and many of the teachers now teaching in the public schools of Nova Scotia went up to examination from his school, and they look back with pleasure on the days spent under his training.Col. Sun.

The temporary vacancy in the Halifax academy has been filled by the appointment of Henry M. McKay, B. A., of Plainfield, Pictou. At a very early age Mr. McKay was a distinguished pupil in the Pictou academy. In 1884 he entered Dalhousie college, winning a Munro exhibition, which he renewed in 1886. He obtained first-class distinction in classics, mathematics and science in each year of his course 8, besides taking the North British Society's bursary in 1886, and being awarded honors of the second rank in 1888, when he graduated. In competition for the Gilchrist scholarship in 1887, he was placed in the honors division of the matriculants of the London University.-Halifax Chronicle.
D. K. Grant, B. A., has succeeded Mr. Mahon, as principal of the high school of Antigonish.
A. J. Denton, A. B., mathematical master in the Halifax County Academy, has been awarded a scholarship for a special science course at Harvard. His students presented him with an address and valuable souvenir on his departure. He has leave of absence for a year.

## QUESTION DEPARTMENT. <br> Questions and Answers.

B. M., Annapolis Co. Apple, pear and plum trees in this locality have been bored and ruined by the insect sent you by to-day's mail, etc.
The insect is Xyleborus dispar, Fabr, the "pin borer," so called from the size of its burrow. I found one of these holes in the portion of a branch sent, plugged with a wooden peg. About the eighth part of an inch distant was a new outlet bored. No use in pegging up the holes. The beetle, which is not wider than the head of a small pin, deposits its eggs at the base of the buds and the twigs in July or August. When hatched, the larva eats its way down the eye of the bud to the pith, and elsewhere. It changes into the pupa then and comes out about the first of July as the perfect beetle. The beetle itself burrows as well as the larva. The only remedy known by experiment to be certain is the amputation and destruction by fire of affected portions. Possibly a little Paris green introduced into their burrows might be serviceable. It is much more likely to be successful than plugging the holes.

## BOOK REVIEWS.

Stories from Aulus Gelifus, edited by the Rev. G. H. Hall, M. A.: MacMillan \& Co. In the Review for March we expressed our opinion respecting the value and use of annotated editions of the classics. Although "Elementary Classics "was placed at the head of that article as suggesting it, the strictures therein contained were not directed against any special edition, but against the academic use of such books in general. Many of these texts and notes, etc., are of great merit, and will no doubt prove useful to students who are working by themselves and do not possess the necessary grammatical aids. The selections from Aulus Gellius are interesting and simple, and cannot but be looked upon as one of the best of the series of elementary classics. The grammatical notes are clearly expressed, and the exercises for re-traislation well prepared. The other materials, historical and antiquarian, will, we doubt not, be found useful and suggestive. As an elementary reader, if judiciously used, it may be helpful and inspiring.

Selected Poems, from Premieres et Nouvelles Meditations, edited with biographical sketch and notes, by George O. Curme, M. A., Professor of German and French, Cornell College, Mt. Vernon, Iowa: D. C. Heath
© Co., Boston It was upon the publication of these Meditations that Lamartine first became celebrated. They contain many of the choicest of his charming perms. Among the Premieres Meditations the student will timd the master pieces. Le Lac l.Tolement, and sourenir, while cqually heautiful, in the Nourelles Meditations. are Le chant WAmour, l-chis, and Les Preludes The hiographical shetch and notes, in waich Mr. Curme received valuable assistance from Madame Valentine delamartine, the perts miece, will add greatly to the value of the volume.
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Henre the second, by Mrs J. R Green: Oliter (romweli, by Frederic Hartison: London, MacMillan \& Co. and New rork Two other volumes of the Twelve English statesmen, have been received The events of these two remarbable periods are betailed in quite as graphic and interesting a manner as the others which preceded them. In the opening chapter of Henry Il. Mro (ireen shows how, under a forejgn king who never spoke the English language, who lived and moved for the most part in a foreign camp, the races of conquerors and conqueren in England first learned to feel that they were one. By his power the foundation was laid of the united kingdom of Great Britain and Ireland. It was through his " Constitutions " and "Asizes " that it came to pass that over all. the world the Engtish-speaking races are governed hy English and not by Roman law.
The student will find in Mr Harrison's Oliven (romwell a most impartial history of that most wonderful man. The author dues not make him a perfect hero, or spotless saint. but unlovely failings, which in truthfulnes be notes. disappear in a larger view of the essential grandeur, sincerity and deroteduess of the man.

Nature Readers, Seastide add Wasider, No. 1 and? by Julia Mc. Nair Wright: D). (. Heath \& Co., Publinhers, Boaton. These small rolumes, of some wand 1 an paces respecturely, are designed as readers for young children. Instead of spelling out some stupid story about the dog or cat. there is here conveyed intensely interesting and accurate information about the forms of life which are likely to be met by the seaside and wayside. It will make the first attompt at reading really interesting to the children, and cannot fail at the same time to develop an attention to the wonders of nature around them, and make them accurate olservers. When we read over these books, as we have just done with much profit, too, at our advanced age, our only regret was that we were not started in our educational career on such a course. Tcachers, if you want subjects for nature lessons, get No. 2 for yourselves. It, forty simple but accurate and illustrated lessons on the ants, the earthworm, the house fly, the beetle, the barbacle, the flowers of the sea, the seastars, the dragon fly and his cousins, etc., will be a revelation in the delightfulness of natural history teaching. It is none of your Paul Bert crams. Get No 1, with its simple nature teacl ing, where the little ones are intruduced to Mr. and Mrs. Crab, visit his house, learn how he gets a new coat, what he does, his friends, other crabs, the cratis enemies and his uses, all in ten lessons. Then a half a dazen more on Mr. and Mrs. Wasp. Then the bee and the spider, and
the shell-tioh Mr. Conch, the seabobies, Mr. Drill, and the story of a shell tioh war. It would tee a grand thing if every chili in the land could beegin his reading course with such books. It would do morally for our children much that the sumberschocl and the church cannot do. It would draw them in their leinare muments to the insentigation and enjoyment of the intinite store of marvels in the handiwork of (ind around them. It weuhd ammihilate the idte hour, in which, meorling to the pret.

## catan tin is sume mishtice atil

For ide handsto du.

Shanceres Richabid III, withan introduction and notes, hy ( 11 Tawnes, M $A$, principal and professor of English literature, Prebilency College, Calcutta. This last volume of "English Clawics for Itudan students" is valuable, especially for th motes, which take up more than one-half of the book, of 250 pares. Thee are so simple that the goungest student of thakeopere cannot fail to comprehend them, and at the same time they contain much knowledge which will be serviceable to all almirers of this great poet In his introduction, which, white short, in exceedingly interesting, the author adopts the views of kreyssig, the celebrated Cerman critic

## BOOK: RECFLVELS.

A Text-Bonk of Elclin's Eifments. Iondun MacMillan d Co, and New lourk.
Shakeapere: Henby V'. by D Deighton, M A. London: MacMilland Co and New York.
Composition and Rhetorie by Practien, by William Williams, B.C. Boston: I) C. Heath \& Co.
Stodento in (iesemal Histoby, and a teacher's manual to accompany the same, hy Mary I) sheldon. Boston: D.C. Heath \& Co
Mantal Trainisi; No. I. for teabers in the primary grades of common schools. Bonton: 1) ( ${ }^{(H E a t h}$ \& Co.

## EXCHANGES.

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