

The Educational Review.

Devoted to Advanced Methods of Education and General Culture.

PUBLISHED MONTHLY.

ST. JOHN, N. B., SEPTEMBER, 1894.

\$1.00 PER YEAR

G. U. HAY,
Editor for New Brunswick.

A. McKAY,
Editor for Nova Scotia.

J. D. SEAMAN,
Editor for P. E. Island.

THE EDUCATIONAL REVIEW.

Subscribers should promptly notify the REVIEW of change of address giving old as well as new address. Communications from New Brunswick should be addressed EDUCATIONAL REVIEW, St. John; from Nova Scotia and Newfoundland to W. T. Kennedy, Academy, Halifax; from Prince Edward Island to J. D. Seaman, Charlottetown.

CONTENTS:

EDITORIAL—	65-69
TALKS WITH TEACHERS—	69-70
N. B. SCHOOLS OF ODDEN TIME—	70-71
CONTRIBUTED ARTICLES—	72-73
The Life-History of a Butterfly—National Education Association on—Miscellaneous Suggestions—Why Some Teachers Fail	
SELECTED ARTICLES—	74-76
Selections from Colonel Parker's New Book—Sir Edward Arnold's Experience—Why We Invert the Divisor—The Seven Provinces—The Queen is Small But Graceful—We Have All Seen This—The Scholar and the Parrot.	
QUESTION DEPARTMENT—	77-78
Course of instruction for Grammar and High Schools,	79-80
School and College—	80-81
Book Reviews—September Magazines—	82-83

Wanted—Copies of REVIEW for July, 1894.

WITH this number of the REVIEW is sent the revised course of instruction for the public schools of New Brunswick. We direct the particular attention of our readers to an accidental omission made in the course printed on the new registers and sent to teachers. This is supplied in the course as reprinted and sent with this number of the REVIEW. The history for grade four in the mixed course for country schools is the same as for grades six and seven in the regular course, and the history for grade five in the country schools is the same as for grade eight in the city schools.

In this number of the REVIEW we publish the course of instruction for superior and high schools in New Brunswick. In its main features the course seems an excellent one. A somewhat hasty examination of it leads, however, to the following conclusions: First, it is doubtful whether arithmetic can be left out of the last two grades in the high school until it is more thoroughly taught in the common schools. Second, there is not a sufficient amount or variety in the English literature, nor is it graded according to the attainments of the pupils; the literature of grade eleven is more suitable for grade nine, and *vice versa*, while Meiklejohn's English literature,

a valuable compendium, is left for grade twelve, which does not yet exist. Third, Grecian and Roman history, and ancient geography, which are required for junior matriculation in the New Brunswick university, are not taken up in time to be of service to intending matriculants, and not until four or five years after the pupils have commenced the study of Latin and Greek. Fourth, some provision should be made for the study of German and an advanced course in drawing.

The St. John *Sun* is the first newspaper in the lower provinces to introduce type-setting machines into a printing office. The *Sun* before that was the model of a neat and well printed journal. Now it has excelled itself, and in typographical appearance as well as enterprise, is one of the leading journals in the Dominion.

County Institutes will be held this month in Kings, Albert, and Kent, and in Charlotte County early in October. We hope the secretaries of these institutes will send concise reports of the proceedings for the REVIEW.

THE very full and prompt attendance at the city schools at the beginning of the term is a very strong argument for the retention of the terms as they are in New Brunswick. Advancement and new surroundings are a strong inducement to pupils to be present at the beginning of the term and arrangements are made accordingly.

PRIMARY teachers have no longer to complain of the varied attainments of their pupils. They all begin at the same time, and must begin promptly, thus the great majority of pupils do not suffer owing to the remissness of a small minority. Pupils who might have entered in the spring will be just as far advanced at the end of the term, and their interest in school will not have flagged by want of attention in the first months.

WE neglected to mention in connection with the educational institute held in St. John, in June, the excellent display of kindergarten and other school materials made by Selby & Co., Toronto. The dis-

play was very creditable to that enterprising firm and to Mr. Selby who personally superintended it. The series of progressive drawing books especially attracted attention, their merit being conspicuous to those who took the pains to examine them carefully. It is to be hoped that the enterprise of Selby & Co., in making such an exhibit will be recognized by an increasing demand for the materials which they took so much trouble to display.

VACATIONS.

In the more remote country districts, and in an occasional newspaper article, the long summer vacation is sometimes sneered at, and the teacher is held directly responsible for it. If the teacher is responsible he has been much more successful in urging his claims upon the public in this particular than in attracting consideration from the public in any other. That the teacher does not object is only natural; that he deserves it equally with the pupil is indisputable; but that he is responsible for it is not true. The parent has taken that matter in hand and has successfully contended, not only for longer vacations, but shorter school hours and less home work of all kinds. It has not been long since school hours were much longer, and even Saturdays were not holidays. Since these changes have been made it has been noted that pupils leave school at an earlier age than during the olden times. Will any one, not a pessimist, contend that they are not as well equipped mentally as formerly? To whom is it due that better work is done in shorter time? It is due to improved methods of teaching and a greater expenditure of nervous energy on the part of our teachers, and the advance is not costing the state nearly as much as it is worth. Teaching is not, under the most favorable conditions, a healthy business, and there are few millionaires engaged in the work. Fresh air is to the average teacher a highly prized luxury, and he returns compound interest to the state on all he receives.

Can any one advance any reason why the country district is not entitled to as long a summer vacation as the town or city? It would not take long to look for reasons for a change exactly reversing the present order. The country trustee wants longer vacations, but he is averse to thinking he has to pay for them.

SCHOOL EXCURSIONS.

In the *Century* and *Forum* Magazines for September, are two noteworthy articles on school excursions, both by Dr. J. M. Rice. The former is an account of a seven days' excursion during the summer of 1893, of about 38 teachers and pupils, undertaken by the

school of practice of the University of Jena. Such excursions have become a regular part of the instruction of the boys, and to some extent of the girls, in the German schools. These "school journeys" are thoroughly scientific in their management, and much of the school instruction of the year, both before and after they have been undertaken, are based upon the material acquired or expected to be acquired. The journey of 1893 was undertaken for the purpose of preparing the pupils for the study of the history of the Reformation. For weeks beforehand, the pupils' lessons were directed to a study of the geographical features, industries, and history of the section to be visited, and during the excursion lectures were given by the teachers and others, and class recitations were conducted on all available opportunities, care being taken that the pupil should make the utmost of these opportunities. We cannot here enter into the details of the excursion. It is sufficient to say that the physical welfare was looked after as carefully as the "roughing it" through a rugged and mountainous country, with the long marches and inferior inns, would admit of. The cost to each pupil for the seven days did not exceed sixty cents a day.

The second excursion, described in the *Forum*, was undertaken by the Anderson School, Indiana, and embraced a trip to Virginia and return. It also occupied seven days, and was undertaken at the suggestion of Dr. Rice, who had taken part in the "school journey" from Jena the year previous. The distance travelled was 1800 miles, and the cost per head was \$30—a much more expensive trip than the German one, where the cost did not exceed \$4.20 for each pupil. The number of pupils and teachers embraced seventy-eight. The pupils were from the advanced schools, and the cost was borne by the pupils themselves and the teachers who took part, whereas in Germany it was borne by the university and the school authorities. It may be said that in the German excursion, the children were much younger and were from the poorer classes. The Indiana excursion embraced a railroad journey through one of the most picturesque pieces of country in the eastern United States, rich in natural scenery as well as historical reminiscences, and of great interest to the student in natural science. The discipline throughout was excellent, and the self-control of the pupils very marked, but the lack of experience and the want of preparation on the part of both teachers and pupils failed to produce the best results.

These excursions are of the greatest interest to educationists. In Germany, where they have been tried for some time, and where the excursion is preceded by careful and thorough preparation, with the

distinct understanding that the excursion is not merely for sight seeing or having a good time, they have produced excellent results, not only as a practical stimulus to study, but in bringing teachers and scholars more in sympathy as to the definite aim of each. We hope to hear of such excursions being undertaken by Canadian schools in the near future. While the longer and more elaborate excursion may be possible only for a few schools, nearly every school is so situated that a day or a portion of a day may be devoted to it, and a stimulus given to the studies of geography, history, industrial arts and natural science, by visits to localities in the neighborhood of the school. In this way, local history, geography, manufacturing and other industries, and the plants, animals and minerals might be delightfully and profitably studied, with this condition—that the excursions be carefully planned beforehand, and instruction given on what is about to be visited. In the course of instruction recently revised for the schools of New Brunswick, school excursions are recommended for the pursuit of natural science. Why not the teacher extend it to other departments?

THE DOCTORS AND OUR SCHOOL SYSTEM.

A few weeks ago the Canadian medical association met in St. John, and during the deliberations of this body the ground was taken by Dr. Bayard (St. John), "that the present school system put too many studies on young children and as a result overstrained their nervous system and caused great injury, from which they never recovered. The effect of this cramming was particularly injurious to girls." In the discussion which followed Dr. Bayard's paper "nearly all the speakers," we are told, "agreed that the school system was injurious," and a resolution, condemning the whole school system of the dominion, was withdrawn, and the following adopted :

Resolved, That the system of education in force in the dominion draws too largely upon the brain tissue of children and materially injures their mental and bodily health.

This is certainly sweeping enough, and being made by men who should know what they are talking about, must carry some weight. But it seems odd that the children of certain physicians in St. John who are members of this association, have attended and are attending the public schools. The writer of this can verify that those who have graduated are not yet in their graves, nor are they walking about physical and mental wrecks, but are good specimens of physical and mental manhood and womanhood. Those attending school now are the picture of rosy health. They seem to be enjoying their school work, too, to judge by their bright faces and elastic, vigorous steps.

They have been, too, and are, among the leaders in their classes.

It cannot be said that *all* the children who are in attendance at the public schools are in this happy and healthy condition. It were idle to expect that, when we consider all the ills that flesh is heir to. But if one will step out on the streets of St. John any day about twelve o'clock or half past three, he will find that perhaps nineteen-twentieths are in the condition of those described above. Dr. Bayard and other members of the association residing in St. John could see this for themselves, or they could enter the schools and see and judge for themselves of the physical and mental condition of the pupils, and possibly suggest remedies for the disastrous state of affairs which they allege exists. They seem, instead, to draw material for their sweeping statement from the small minority of school children whom they have treated. These may be delicate children who may not be able to stand the strain of the school hours, either from constitutional weakness or from what is too often the case among larger pupils—the attempt to do school work and attend parties and keep late hours, or like excesses. Did the doctors, when they spoke from their experience on this subject, carefully weigh the distinction between the average boy or girl attending school twenty-five hours in the week, for forty weeks in the year, who has from one to three hours' work, according to age, out of school, who has plenty of exercise, nourishing food, and abundance of sleep, and the child physically weak, or one whose weakness is induced by the dissipation of late hours, late suppers, insufficient sleep, or the injurious habit of allowing children, especially girls, to leave home with perhaps too long a walk, and a long three hours' session, without a sufficient breakfast?

Such resolutions, unless founded upon more sufficient and exact data than the above, had better be consigned to the waste basket before they see the reporter's note book.

Among the journals that have taken a reasonable view of this subject are the *St. John Globe* and *Fredricton Gleaner*, and the weight of their testimony is strongly against the doctors. Their opinion should be entitled to weight. Mr. Ellis was for a long time a trustee of schools in St. John and took an intelligent interest in the schools, where he was a frequent visitor. Mr. Crocket, of the *Gleaner*, has exceptional opportunities upon which to found a judgment, as he resides in the educational centre of the province, where the intellectual activity of children might reasonably be supposed to be more intense than elsewhere.

KINDERGARTEN.

"Attempts to treat the kindergarten as a separate institution, having aims and methods of its own, different from those which should prevail in other schools, have often in America and Germany proved unsuccessful. It is as an organic part of a complete scheme of juvenile instruction as a preliminary training of those faculties which have afterwards to be developed when the time arrives, that the kindergarten is most valuable." So says J. G. Fitch, one of the greatest educators of the last half of the nineteenth century. If some of our teachers would read, study and dream the life and thoughts of Fröbel during the leisure moments of their holiday communings with nature they would return to their classes new teachers. It would change for them the drudgery of the school room into their greatest delight. A true kindergarten is doing God's work in God's own way. A complete familiarity with Fröbel's Education of Man, Hailmann's Kindergarten Culture, Perer's First Years of Childhood, and Preyer's The Senses and The Will, would be as good as a normal school training. Let the right inspiration possess the teacher and defects of knowledge will soon be overcome.

PRACTICE IN TEACHING.

Whereas, actual practice in teaching is of the first importance in securing the preparation necessary for a teacher ;

And whereas, there arises great loss to the public from the appointment as teachers of those whose qualifications are almost wholly scholastic and theoretical ;

Therefore resolved, that the supervisor of schools is instructed to have in view, in selecting substitutes, the possibility of their future appointment to positions as teachers, and he is authorized to endeavor to provide for those who are properly qualified such opportunities for observation and practice of teaching as may be found by him to be stimulating to the city schools and educative of those preparing to be teachers.

The above resolution of the Halifax School Board shows the trend of public opinion with regard to the requisites of a preparation for the teaching profession. A certain amount of scholarship is of course necessary—the more learning the better. A large amount of professional knowledge is desirable—that is, a knowledge of the end of education, and a knowledge of the child's nature, and of the means best calculated to secure the end. But an adequate apprenticeship is the absolutely essential prerequisite in preparing a teacher for his life work. The would-be lawyer must spend years in the office before he is allowed to practise his profession. The sailor must spend years before the mast before he receives a captain's certificate. The doctor must have a large amount of hospital practice, under skilled physicians, before he

is allowed to jeopardize the bodily health of his patients. Why should the unskilled teacher be allowed to make shipwreck of the lives of his unfortunate pupils, while acquiring at their expense the art of interpreting theories learned from books at a normal school, where the opportunities for the practice of teaching are meagre, and for organizing and managing *nil*.

A course in chemistry and physics would be very useful to a cook, but it is not what she most needs to enable her to make a loaf of good bread. A course in one of our normal schools may be very useful to our would-be teachers, but it is not what is most needed to enable them to teach good schools. Our normal schools lack the essential element—a system of apprenticeship at teaching. Germany, France and England require years of practice, under skilled teachers, before they license their teachers. Boston, Worcester, and many other American cities make provision for practice for those wishing to become skilled in the most practical of all professions. Halifax is asking for the same. Our normal schools are like a boat manned by a skilful oarsman who rows with one hand—the left hand of theory ; the right hand of practice is wanting, and so the progress made is not commensurate with the expenditure of labor.

1851 — Exhibition Science Research Scholarships.

The scholarships are of the value of £150 a year, tenable if satisfactory work is done for two years in any university at home or abroad. Candidates for these scholarships must have spent three years in scientific study, and must be recognized by their teachers as being possessed of special qualifications for original scientific research. They must promise to devote themselves extensively to study and research in some branch of science, and to the promotion of the industrial progress of their country.

Amongst the fourteen successful candidates for 1894, we find one from Nova Scotia: Frederic James Alexander McKittrick, age 25, Dalhousie College and University, Halifax, Nova Scotia; proposes to attach himself to Cornell University, Ithaca, New York, and devote himself to electrical engineering.

The following is a statement of his qualifications: In 1890-1-2, won first class distinctions in practical chemistry, mathematics (waverly prize) and physics. In 1892-93, won Munro exhibition for mathematics, physics and chemistry; was allowed to enter special course in mathematics and mathematical physics. Won first class distinction and first place in dynamics, and second class distinction in practical physics: these being the only subjects in which students of

the special course are examined formerly at the end of their third year. In 1893-94, studied advanced mathematical subjects, physics, practical physics, thermo-dynamics, and electrostatics. Took degree of Bachelor of Science with honors in mathematics and mathematical physics in April, 1894. Professor of Physics (J. G. Macgregor, D. Sc.) report on research on the measurement of resistance of electrotypes conducted by Mr. McKittrick, and states that he has shown such ready resource as an experimenter as abundantly indicates high promise of capacity for original research. Mr. McKittrick is a brother of the Principal of Lunenburg Academy, and taught most acceptably for several terms in his native county of Kings.

EDUCATIONAL CONSERVATISM.

Ever since the world began, the conditions of life on its surface have been changing. The forms and habits of all organic beings are being greatly modified by their surroundings. When unable to adjust themselves to changed condition, they soon disappear or sink to a lower form of existence. The same principle characterizes the progress of human society and the advance in educational methods. The changes necessary to bring the individual into harmony with his surroundings, meet with much opposition, and are often painfully slow, but when secured they produce a grateful harmony.

In education the intellectual conservatism of mankind is very marked. "It demands more than ordinary pedagogic genius to keep the mind always open at all periods of life to the access of new ideas." Reforms seldom come from seats of learning. Our oldest and ablest educationists become so habituated to the ideas on which they were nurtured, that they are unable to take in the full import of new ideas, no matter how anxious they may be for improvement. In the past, reforms have been forced upon us from without. In the future we may hope that some of them, at least, may come from such a psychological laboratory as that of Dr. Stanley Hall's, at Clark University.

We need not wonder at the difficulty that many of our foremost educationists experience in becoming reconciled to an improved curriculum of studies. As Von Raumer remarks: "It is difficult for the unaccustomed sight to compass the greatly widened pedagogic horizon." For example, to depose Latin from the authoritative place which it held for a thousand years, seems like sacrilege, even though conformity to modern culture should demand it. Moreover, these changes imply vastly increased intellectual activity on the part of the teacher. The accustomed and

therefore easy routine of thought that gives fairly good results in arithmetic or Latin, would never serve in the teaching of science. It requires a strong sense of duty and much zeal to cause a teacher to assume greatly increased work with no apparent increase of reward, or at least of that kind of reward which he is capable of appreciating.

But not only are vastly better teachers required; better and more expensive appliances are also demanded. Properly equipped laboratories are a necessity of the new education, especially in the secondary and higher schools. Not only are these improvements expensive in demanding better appliances. They also cost in the demands they make on the time, energy, and capital of the teacher. One whose "stock in trade" consists mainly in a certain amount of Latin, cannot be easily convinced of the great advantages of the science studies.

Another hindrance to the ready acceptance of an improved curriculum arises from the many failures made by its advocates in attempting subjects which they were ill prepared to teach. Notwithstanding all attempts, so far, there cannot be said to be much real improvement in the teaching of science, geography or drawing.

TALKS WITH TEACHERS.

I wish this month to talk with the teachers concerning a few things in writing that have come under my observation. I dare say I shall draw conclusions contrary to the opinions of some of you, but I give them for what they are worth.

If a boy or girl go into an office, he or she will be required to sit or stand squarely facing the table or desk, and I believe that is the proper position for the pupil. The body should be free from the back of the chair or desk, and not touching the table or desk in front.

The spine should be straight, shoulders back and chest forward, and the poise such as will give the best possible control of the right hand and arm.

The light should come so as to leave no shadows on the page—that from the left and rear is the best.

Our school desks are, in the majority of cases, not deep enough for the square position, and pupils are apt to interfere with one another.

In the earlier stages of writing, be sure to have permanent lines scratched into the slates for the pupil's guidance. They do not hurt the slates for other work, and are indispensable for uniformity. Have, where possible, long slate pencils, to prevent cramping the fingers. If you do not induce the pupil in the first year to hold pencil or pen properly,

it is a chance if you or any other teachers will succeed in it after. Hold the pen yourself in two fingers and then try three, and see the difference in the facility of using it.

My experience is against the use of the lead pencil. Few young pupils can sharpen it properly, and this requires to be done very frequently. On account of blurring, it is very difficult to keep the work neat. I think the time spent with the pencil could be more advantageously used in learning the use of the pen.

Decide upon the kind of pen to be used, and induce the pupils to procure it. Blunt pens are not good for school use. Examine them frequently, as a pupil will continue to use worn out pens long after he should.

As to style of writing, I must say I favor the plain round hand devoid of flourishes of every kind. Do not discourage upright writing; it may not be so rapid as a running hand, but it is more legible, and to me looks better. The square hand affected by some of our young lady pupils, and said to be fashionable, looks well if not examined too closely, but it is stiff and very illegible.

Have a writing class once a week. Let the pupils take places for excellence, and judge all the grades together—not by the proficiency of any pupil, but by the degree of improvement made since the last class.

It is needless to say that constant supervision on the part of the teacher and class instruction from the black board are necessary to insure good writing. Excellence in writing appeals more to the average ratepayer than excellence in any other subject.

Do not hold the Inspector's visit over your pupils as a sort of a nightmare. If you cannot get them to work in any other way, it is well not to adopt this as it will defeat itself by inspiring fear of the examinations. Teachers and parents do a great deal of injury in this way to backward pupils.

Do not suggest to the Inspector that the pupils are nervous—it has become a chestnut.

Do not ridicule pupils who come to school barefooted. It sometimes arises from necessity, and often from choice; in all cases the habit is healthy and not offensive. Teachers who have been brought up in the city, and not accustomed to seeing little barefoots, sometimes object without thinking.

There are few men, great or small, in this country, who have not gone barefooted at some time in their lives, and enjoyed it too.

For the REVIEW.]

New Brunswick Schools of the Olden Time.

By W. O. RAYMOND, M. A.

We shall now briefly consider the circumstances that attended the introduction of the National (or Madras) system in this province.

As already mentioned, the "National Society for the education of the poor in the principles of the established church" was founded in the year 1811. Through its instrumentality in less than four years 570 schools were established in England in which more than 100,000 pupils were under instruction. During the same period 336 masters and 86 mistresses attended the central training school at Baldwyn's Gardens, London, and acquired a competent knowledge of the principles and practice of the system. The Society for Promoting Christian Knowledge (familiarily known as the S. P. C. K.) undertook the publication of the books used in the National schools which they supplied to the pupils at a nominal cost, in some instances gratuitously.

The wonderful success that had attended the Madras schools in England led to a desire for the extension of the system to the British colonies. Accordingly as a preliminary step, in 1814 the S. P. C. K. sent out to their local committee in Halifax 500 sets of National school books for distribution among schools in the Maritime Provinces. Two years later the sister Society for the Propagation of the Gospel in Foreign Parts, sent out a Scottish Episcopal minister, the Rev. James Milne, for the purpose of introducing the system into Nova Scotia and New Brunswick. Mr. Milne was a scholarly man and had qualified himself for his work by attendance at Baldwyn's Gardens. He spent nearly two years in promoting the cause of National school education in the Maritime Provinces with good success, at the expiration of which period he was appointed rector of Fredericton (in succession to Rev. George J. Mountain) by his Excellency the Lieutenant Governor.* Meanwhile the S. P. G. had sent out to Halifax a Mr. West, reputed to be one of the most accomplished masters ever trained at Baldwyn's Gardens, allowing him the handsome stipend (for those days) of £200 sterling. Through the exertions of Mr. West a central Madras school was opened at Halifax, December 2nd, 1816, the establishment of which was hailed with delight by all classes.

* By a most remarkable coincidence Lieut. Gov. Smyth and the Rev. James Milne, whose names are so inseparably connected with the introduction of the Madras system in this province, died at Fredericton on the same day, March 27, 1823, within a few hours of one another and each after a very short illness. The writer has in his possession a copy of the eloquent and impressive sermon preached by the Rev. Dr. Somerville on the occasion.

The Earl of Dalhousie became its patron; liberal donations on the part of leading citizens supplemented by legislative aid soon sufficed for the erection of a suitable building for its accomodation. It was soon deemed advisable to depart from the English practice of confining the instruction entirely to elementary subjects. Accordingly the course of study was extended by the addition of such subjects as "Grammar, Geography, French and the higher branches of Arithmetic and Mathematics." In England the practice had been to confine the instruction to the children of the poor, but it was found necessary at Halifax—as afterwards at St. John, to depart from English precedent in this particular "as children of the first respectability whose parents were desirous of benefiting by the establishment frequently applied for admission."

The Madras school in its origin as well as in the character of the religious instruction imparted was always a distinctly Church of England institution; but the merits of the system were so superior to the primitive methods hitherto in vogue and the education afforded so inexpensive that a natural desire was speedily manifested by the people at large to share in the benefits irrespective of religious denomination. This led to some slight modification in the rule of church attendance whereby the children of Presbyterians, Methodists, Baptists, etc., were allowed to attend their own places of worship. The Roman Catholics, after acquiring the method, in some instances removed their children to schools set up under their own management.

However, all these modifications and extensions did not materially affect the principal object of the National system, namely, gratuitous education for the poorer classes.

Immediately after the establishment of the Central School at Halifax, Mr. West began the work of training school masters and mistresses in accordance with the new method.

The Madras school was so ably conducted by Mr. West, and by his successor (in 1820) Mr. Abel S. Gore of Sackville, N. B., as to excite a genuine "sensation" throughout the land. Even the staid and sober newspapers of the day grew quite enthusiastic upon the subject. Here is what the *St. John Courier* of January 17th, 1818 says:

"The Madras system is the result of an experiment made at Madras to render easy, pleasant, expeditious and economical the acquisition of the rudiments of education and to combine in harmonious union the progress and amusement of the scholar, the ease and satisfaction of the master, and the interest of the parent. * * * The school, how numerous soever, is taught solely by the pupils (under a single master) which has put an end to the race of dunces, superceded the necessity for

punishment, and given the same interest and delight to the school-room as to the play ground."

How curious is the swing of the pendulum in educational methods. The system of Bell and Lancaster after due trial is apparently found wanting and abandoned even by the Madras school itself. Yet in modern days the principles underlying the system are coming again to the fore. Bell's idea that the school is an organized community whose members have much to learn from each other and who should therefore be placed in helpful mutual relations, is now deemed not unworthy of serious consideration, and Lancaster's dictum "let every child have for every minute of his school time something to do and a motive for doing it" is accepted without demur. Kindergarten methods for small children, calisthenics and military drill for larger ones recall the exercises of the old Madras school.

Mr. West's training school at Halifax was well patronized. School masters and mistresses from various parts of Nova Scotia and New Brunswick eagerly sought instruction in the methods of Bell and Lancaster. But it is a remarkable fact that the first Madras schools of this province were not established in the principal towns, this honor was reserved for two comparatively obscure settlements in what is now the county of Kent.

Anthony R. Truro taught one of these schools at "Kitchibigwalk" (Kouchibouguac) early in 1817, the other was opened the same year at Buctouche. The year following Madras schools were taught in St. John by George Bragg, in Sackville by Abel S. Gore and at Miramichi by John Smith. Soon after we find them established in nearly all of the principal towns and settlements of the province.

The S. P. G. afforded material assistance in the extension of the National system by the grant of a sum of money "for the encouragement and support of school masters while receiving instruction from Mr. West in the National System of Education." The S. P. G. also from time to time voted considerable sums towards school masters' stipends. In the year 1827, for example, that society expended about \$1600 in this way in New Brunswick, which was divided among some twenty school masters each pursuing his calling under the supervision of the parish clergyman.*

* After 1833 the S. P. G. grants for primary education gradually decreased and ceased in New Brunswick in 1836 although they were continued in Nova Scotia till 1858.

Mr. Murray, the head of the famous London publishing house, holds that novels should not be admitted to public libraries until, by having lived five years, they have proved their permanent value.

For the REVIEW.]

The Life-History of a Butterfly.

A butterfly's life is varied and interesting in every stage of its development. Butterflies, like other animals, of course have the egg stage, but in addition they pass through two more stages, viz.: the larva or the caterpillar stage, the chrysolite stage, and finally that of the imago or perfect butterfly. The butterfly generally deposits her eggs on the under sides of leaves, either singly or in pairs. The eggs are beautiful objects when viewed under the microscope, being of all shapes, and also exquisitely carved. The female selects the proper plants upon which, when they hatch, the young larva can feed. Thus the cabbage butterfly (*Pieris Rapæ*) selects the cabbage as the plants so deposit her eggs upon, so that when the caterpillars emerge they have their proper food within reach. The larva stage is the one in which so much damage is inflicted upon fruits and the foliage of trees. After emerging from the egg the caterpillar begins to feed on the food within reach, and grows so rapidly that it attains enormous proportions, and is forced to cast off its skin several times, or to molt. At last it ceases to eat, and securing a suitable position, transforms into a chrysalis. The chrysalis stage is a stage in which vast changes are taking place to fit the insect for a butterfly's life. Instead of the mouth of a caterpillar (which is very tough and strong) a weak mouth, adapted for sucking purposes is acquired, the antennæ and eyes appear, the eyes being compound while a caterpillar's eyes are simple. A compound eye is one that is made up of a number of facets, as in a dragon-fly, where there are as many as 12,000. The animal also acquires wings and legs, all of which can be distinctly seen even in a chrysalis, the wings and other appendages being then folded upon the breast. The chrysalids hang in all situations, some selecting spots where they can hang securely by the tail (as in *Papilio asperias*), and being supported by a silken girdle round the waist. Other hang by a pad of silk on the tail, and are free to swing to any breeze.

After being in these positions for a considerable period (often all winter), the insect emerges from the chrysalis case, as a perfect butterfly or imago. But small parasitic insects are in abundance, and these entering into the body of the chrysalis, soon terminates its life. Thus ends the transformation, and having passed through the three successive stages of growth or development, the insect is said to have a perfect metamorphosis. In the last stage no damage is inflicted, but the insect has now become directly being a means of transferring pollen from flower to

flower. Thus the formation of seeds and of new plants is assured, while the butterfly gets nectar in return for its trouble. With a view to insect fertilization, many plants strive to attract them either by colour, smell, or nectar.

GEORGE WHITMAN BAILEY.

Fredericton, N. B.

For the REVIEW.]

National Educational Association.

The National Educational Association of the U. S. met at Asbury Park, N. J. July 10-13. Over 5,500 enrolled and much interest and enthusiasm was aroused by the presence of so many educationists at this beautiful seaside resort. The winter population of 10,000 increases every summer to 50,000. Hotels and cottages with every modern convenience gave reduced rates to the teachers and much kindness was shown by the residents in every possible way. To me, a Nova Scotia teacher accustomed only to small teachers' gatherings, this great meeting was unique. It is good for teachers to come together and get new ideas and higher inspirations; to discuss improved methods of teaching that help us to leave the beaten paths and go in for improvements and progress.

The general meetings were held in the large auditorium in the mornings and evenings and were ably presided over by President Lane, Chicago, while the departmental meetings were held in the afternoons in the different churches and halls. The different departments of the association were child study, kindergarten, elementary education, secondary education, higher education, normal education, manual and industrial education, art education, music education and business education. Many interesting papers were read, followed by able discussions showing up the subjects in their various phases. Dr. Peabody of Chicago, speaking of the educational value of the Columbian school exhibits, said that the Canadian exhibits showed that the "Canadian school system was central in authority and widely diffused in its application." Ontario beats all countries of the New World in employing only trained teachers. Dr. J. A. McLellan of Toronto, a native of Nova Scotia, read an able paper on "The Ethical Aim in Teaching Literature." The child study and kindergarten departments were extremely interesting. The necessity of studying the child and giving him the right literature and training early, was shown.

Miss Wheelock of Chauncy Hall, Boston, in a stirring address, showed the ideal relation between the kindergarten and the primary school and the value of the kindergarten, which develops through self-activity, as a foundation for sound instruction.

K. A. McK.

For the REVIEW.]

Miscellaneous Suggestions.

It is no waste of time to have the scholars sing. The teaching of patriotic songs will do much to make the rising generation patriotic.

Do not, in teaching history, magnify over-much, the sovereigns; few of them have amounted to much.

A vigorous warfare should be waged against the vicious school habit of putting the lead of a pencil in the mouth. Always bad, it is positively dangerous the case of school pencils that pass from child to child.

Have you some interesting autograph letters or a collection of coins? Take them into your classes. Perhaps an autograph letter from one of the great writers of England will arouse an interest in literature that might otherwise lie dormant. Perhaps "the image and superscription" of some sovereign on an ancient coin will add new life to the history recitation.

Too many school courses are the result of tinkering and patchwork by men who have no clear knowledge of the aims or principles of education, and little acquaintance with the capabilities or needs of children. It requires more than an educational cobbler to frame a progressive, rational, well-adjusted course of instruction for graded schools.—*Emerson E. White, LL. D.*

David P. Page tells in his "Theory and Practice of Teaching," of a visit to Auburn Prison. "Why are these men here?" he asked himself when he saw the prisoners. His thoughts ran back to their educators. "Once," he writes, "these men were children like others. They had feelings like other children, affection, reverence, teachableness, conscience,—why are they here? Most of them, because they had a wrong education. Tempted just like other and better men, they fell, because in early childhood no one had cultivated and strengthened the conscience God had given them." How many of them might have been saved! Teachers, fathers and mothers have a fearful responsibility, of which they cannot be too often reminded. Prisons reveal the educational standard of a country.

It is not enough that the teacher secures diligence in study, good order, and proper behavior in school. The vital question is: to what motives does he appeal in gaining these ends? If these be low and selfish, the results, however fair in appearance, will be like the apples of Sodom in the life. No temporary interest in the study, no external propriety of conduct can compensate for the habitual subjection of the

will to the dominancy of the lower motives. The pregnant truth is, that no training of the will can stand the supreme test of conduct that does not put its acts in harmony with the imperative *ought*—the last word in the vocabulary of reason and duty.—*White.*

For the REVIEW.]

Why Some Teachers Fail.

Some reasons for the failure of teachers taken from a scrap book.

They are too lazy—neglect details—have no eye to order—hope to get along without effort—are easily discouraged—fail to know what the world is doing—do not find out what other teachers are doing—do not try to improve—have too much outside business—talk politics too much—philosophize on everything but their own business—fail to have new ideas—fail to use such as they have—are penny wise and pound foolish—have become dry, stale, and repulsive to live children—think inferior work does just as well as good work—are not polite enough—think most things take too much trouble—use poor judgment—fail to practise what the educational papers tell them—rely on the little stock of goods they began business with—do not study the children—forget that the art of teaching is an art that requires study—can see the weak points in their scholars, but not in themselves—are stingy toward themselves—read no educational papers or books—know so much they will learn no more—think they cannot learn anything more about their art—are trying to go into something else—do not determine to be the best teachers in the place—are rusty and without ambition—begin with a small stock of ideas, and have not increased it—follow the same method with each class—keep away from their pupils—never visit the parents—attend no teachers' meetings—do not seek for information by studying the methods of the best teachers—complain too much—do not see that the profession is as high as the teachers themselves raise it—do not study the great masters of the art—drop the school when it is over and never think of it again till they come up before their pupils next day—under-rate their business—think any one can teach who knows a little about studies—overestimate themselves—underestimate the pupils—think the school was made for them—neglect to think of the pupils' good at every point—do not take common sense as the guide, but hug a formalism handed down from the dark ages—do not study the lessons before teaching—do not travel—fail to manage with tact—are not in real earnest to teach, so that "to-morrow finds them farther than to-day."

Is your portrait in the above?

S.

Selections from Colonel Parker's New Book—Talks on Pedagogics.

History tells us what man has been ; science, what he should be. My earnest plea, then, to you, my fellow-teachers, is, that our children, the future citizens of our country, shall have the privilege and the means of studying science throughout their whole course. There are countless opportunities for the study of elementary science in primary and grammar schools. * * * * Education can be made so much better, so much richer in means and influence and breadth by making observation the foundation. * * * The isolated study of text-books has for its main product the presumption "not of brains," but of knowledge—a self-satisfaction which is a bar to all future development.

WORD METHOD IN READING.

The so-called word method was the first recognition of the plain and simple psychological fact that a word acts as a whole just like any other object, instantaneously, and that there is no instinctive attempt on the part of the child to analyse the word into its parts, or to associate it consciously with its corresponding oral word. Any attempt at analysis, at first, weakens the action of the word, is entirely unnecessary and at the same time unnatural.

HEALTH AND STUDY.

Genuine educative work is the healthiest exercise, both for mind and body, of which the human being is capable ; the power of endurance in unity of action is simply marvelous. All-sided education stimulates the healthful action of the brain, nerve, and muscle. The laws of compensation, of interaction and reflex action, of co-ordination and adjustment, bring about a constant refreshment, building up the physical agencies of the mind, that would otherwise be weakened through one-sided or partial action. The prolific cause of overburdening is not genuine work, but mental drudgery ; one-sided and partial action of the being, in which there is no continual well-spring of joy in the discovery and expression of truth. Excited by the glittering baubles of reward, of per cents., place in the class, of victory over others, ambitious students struggle for the mastery of dead forms until nerve power is exhausted, sympathetic organs fail in their functions and the muscular system collapses. "Oh, what a fine scholar she is!" means too often how rapidly she is using up nerve force and exhausting vital energies. Motive, too, sinks to the lowest plane in this senseless and selfish striving for rewards and approving smiles.

ACCURACY ABNORMAL.

The only excuse for flat copy drawing is the false demand for abnormal and mind-crippling accuracy. True accuracy has only one normal relation, and that is its relation to adequate expression of thought: constant effort in the direction of adequate thought—expression is the one way and means by which adequate thought and skill is acquired. The false assumption that the child must be accurate or nothing, leads to the abnormal demand for minutely detailed forms, and is the preparation that never prepares.

Nothing but the true, the beautiful, and the good, should ever be presented to the child. The principle so often enunciated, that a child should never see a wrong form, should never make a wrong form, is to be applied in all directions.

PUNISHMENTS AND REWARDS.

Bad as corporal punishment has been and is, the substitute of a system of rewards is infinitely worse. Fear of punishment is bad enough, indeed, but the systematic development of selfishness is damnable. The infliction of corporal punishments is degrading to the mind; but the hope of extraneous reward for study destroys the highest motive and sedulously develops its opposite.

CONCENTRATION—VITAL PRINCIPLE.

The pre-eminent virtues of concentration is the economy of mental power, the path to freedom by the shortest line of resistance. It proposes that the action of the mind shall be concentrated from first to last upon intrinsic educative thought; that all modes of expression and attention shall be auxiliaries, and acquired as auxiliaries. It means that the three famous "3 R's" of antiquity may be learned—nay, are learned—far better, far more effectually and efficiently, used as means to an end, than as ends in themselves. * * * It means the early establishment of the habits of self-effort, of attention, of observation.

Don't scold.

Don't forget to smile.

Remember, children act as they feel—therefore reach their feelings.

The moment you feel impatient, drop your voice; never raise it except to express gladness or admiration.

You are not a child; control yourself and be well-behaved at all times. Remember, the children are watching you.

Sir Edward Arnold's Experience.

After leaving Oxford and before receiving the appointment of principal of the Government Deccan College in India, I was chosen by the governors of King Edward's school in Birmingham as a master of the English division of that great educational institution, and passed a brief period there. The school house, designed and erected by Barry, who built the Houses of Parliament, is of noble aspect and elevation, as everybody knows who is familiar with Birmingham. I have never once been in that city since the year 1856, and can therefore speak only from distant memory of the edifice, its massive structure, stained glass windows, spacious class rooms, and the noise of busy life forever echoing along its front, which looks I believe, on New street.

But very pleasant days—albeit, no doubt, a little laborious—were those which were passed by me in that stately building, teaching the young mechanics and embryo manufacturers of the city, in company with fifteen or twenty other university men from Oxford and Cambridge, under the kindly sway of our amiable and learned head-master, Archdeacon Gifford. I became immensely attached to my two classes, and was, if I may venture to say so, somewhat popular in the whole school, chiefly perhaps, because I tried to identify myself with the feelings of the boys, and to render their lessons pleasant and attractive, instead of cramming them artificially with verbs and facts and axioms, as prize poultry are fed.

On a certain rather notable occasion, we in concert solemnly abolished the stick as an instrument of education. That detestable implement used to be placed on all the desks of the masters, along with the ink-stand and class-list, always to my profound disgust; for he who cannot teach without the stick had better get to some other business. But the thing always lay there; and one sultry afternoon, when Birmingham outside was blazing like one of its own blast-furnaces, and my young brass-founders were all languid with the heat and the involved rhetoric of Cicero, I myself being, possibly at the time, a little dyspeptic, there was a disturbance of order near my chair. "The sight of means to do ill deeds makes ill deeds done," as Shakspeare truly writes. Thus it was that I caught up my cane and gave a hasty cut upon the too-tempting back of one youth who seemed the offender.

"If you please, sir," said the boy, squirming, "I did nothing! It was Scudamore that kicked me in the stomach, underneath the desk."

Now, it is obviously difficult to pursue the study of "*De Amicitia*" quietly and satisfactorily if you be

interrupted in such a manner; and inquiry revealed that the statement was indeed true. Scudamore had demanded from his neighbor, quite illegitimately, the explanation of an obscure passage, and, not being attended to, had taken this much too emphatic means of enforcing attention. Meantime the most guilty party appeared to be myself; and having called the class up, I said to the doubly-wronged boy, who was still "rubbing the place":—

"It is I who am most to blame for having dealt you an undeserved blow. Take that cane and give it back to me, as hard as you got it."

"Ah, no, sir," the lad answered: "I can't do that."

The whole great school-room was now listening, masters and all; and the scene had become a little dramatic and important. It was necessary, therefore, to go through with the matter; and I insisted.

"Jones, you must do as I tell you. I insist. It is the only way in which we can all get right again."

"I really can't hit you, sir! It didn't hurt me so very much, sir! If you please I don't want to do it," said Jones.

"Well," I replied, "but you must obey me; and, if you disobey, I am sorry to say that I shall make you write out that page of Cicero three times, staying in to do it."

Whether it was desperation at this dreaded alternative (for it was cricket time), or whether it was that the sparkling eyes of his class fellows around him, all evidently longing to have the good luck themselves of "licking" a master, suddenly inspired Jones, I know not. What I do know is that he reached forth his hand, took the cane, and dealt me no sham stroke, but the severest and most swinging cut over my shoulders. I had no idea that the ridiculous implement could sting, as it did, like a scorpion. I had never once been caned or flogged at school, nor had ever received a blow of any sort which I did not promptly return. Consequently, the sensation was something of a revelation; and I could well understand at last how mortally boys must hate forever and ever the "glories which were Greece, and the grand-ours which were Rome," when they are recommended to their unwilling intellects by these cowardly and clumsy methods.

"Rubbing the place" in my own turn, I managed to thank Jones for his obliging compliance, and then said to him:—

"Break that detestable weapon across your knee and throw it out of the window. Never again will we have anything to do with such methods here."

Why do we Invert the Divisor?

This subject is discussed in nearly every institute, and yet when the examiner asks that question the answers many times show that it is not clear in the mind of the teacher.

If the child has been properly taught up to the time of the introduction of division of fractions, he will understand the relation that each fraction holds to the unit from which it was derived. If he does not understand this, you will teach it to him in the following or some better way. Draw a line upon the board that is nine inches long; let them think of this line as a unit or 1. Use 1, 2, 3, 4, etc., as divisors, and secure the quotients $1\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, etc. These quotients are readily perceived by the pupils. Use $\frac{2}{3}$ as a divisor.

Show that $\frac{2}{3}$ is contained in the unit one time and one-half of another time, or $\frac{3}{2}$ times. Use $\frac{3}{4}$ as a divisor, and show by use of line and other means, that it is contained in 1, 1 and $\frac{1}{3}$ or $\frac{4}{3}$ times. Use other fractional divisors and generalize as follows: A fraction is contained in the unit from which it is derived as many times as is indicated by the fraction inverted. Follow this conclusion with many questions similar to the following:

How many times is $\frac{5}{8}$ contained in 1?

$\frac{5}{8}$ represents the division of 1 by what number?

What fraction is contained in $1\frac{1}{4}$ times?

A man divides an acre of land into plots of $\frac{2}{3}$ of an acre each. How many such plots can he secure?

You say that $\frac{2}{3}$ is contained in 1 how many times?

Pupil.— $\frac{2}{3}$ is contained in $1\frac{3}{2}$ times.

Then how many times will it be contained in $\frac{1}{2}$ of 1?

Pupil.— $\frac{1}{2}$ of $\frac{2}{3}$ times.

And how many times in $\frac{1}{7}$ of 1.

Pupil.— $\frac{1}{7}$ of $\frac{2}{3}$ times.

What does an inverted fraction show?

Pupil.—The number of times that the fraction is contained in 1.

Analyze the following: divide $\frac{5}{8}$ by $\frac{3}{4}$.

Analysis: $\frac{3}{4}$ is contained in $1\frac{1}{4}$ times, and it is contained in $\frac{5}{8}$ of $1\frac{1}{4}$ of $\frac{4}{3}$ times, or $\frac{20}{12}$ times, or $1\frac{8}{12}$ times, or $1\frac{2}{3}$ times.

Give many examples, have the analysis written, and you need not fail to make this plain to any class.
Exchange.

A school teacher near Dawson, Ga., having instructed a pupil to purchase a grammar, the next day received a note thus worded from the child's mother: "I do not desire for Lula shall ingage in grammar as I prefer her ingage in yuseful studies and can learn her how to speke and rite properly myself. I have went through two grammars and can't say as they did me no good. I prefer her ingage in german and drawing and vokal music on the piano."

The Seven Provinces.

British Columbia is the largest of the provinces and embraces an area of 382,000 square miles.

Prince Edward Island is the smallest—2,000 square miles.

The smallest of the seven is the most densely populated, having a little over 54 people to the square mile, while the largest is the most sparsely peopled, with a little over three square miles to each person.

There is coal in four out of the seven provinces, Nova Scotia being the greatest producer with an output of about two and a quarter million tons per annum.

British Columbia is the greatest gold producer, the produce of her mines for thirty years having been valued at forty six and a half million dollars.

Nova Scotia has the most valuable fisheries, her annual catch averaging about seven million dollars in value.

Quebec takes the lead in the supply of timber, her output of saw logs amounting to 5,000,000,000 feet board measure, and of square timber to three and a quarter million cubic feet.

Ontario is the banner cheese province, the production running up to about eight million dollars a year.

Combined, the whole seven have resources unequalled by those of any country in the world.

The Queen is Small but Graceful.

The smallest sovereign of the old world, that is for her age, is Queen Victoria, who is under five feet in height, and almost as broad as she is long. Nor does she make any attempt to remedy this condition by any artificial means, for the boots which she wears are almost entirely devoid of heels, and are roomy in the extreme, while many a year must have passed since she has had occasion to require the service of her corsetiere.

Even when standing by the side of the very shortest man, she appears small and stunted, and under the circumstances it is wonderful how she should be able to move about with so much grace and majesty.

Indeed, the curtsies which, on great occasions this wonderful, extraordinary old great-grandmother is accustomed to make to her guests or subjects are perfect marvels of facile grace, altogether astonishing in a woman of her figure.

The normal temperature of a human body is $98\frac{2}{3}$ degrees.

The essence of knowledge is having it, to apply it; not having, to confess your ignorance.

We Have All Seen Them.

People who are proud of their humility.
 People who talk all the time and never say much.
 People who never say much and yet speak volumes.
 People who say a great deal and do very little.
 People who say little and do a great deal.
 People who look like giants and behave like grasshoppers.

People who look like grasshoppers and behave like giants.

People who have good clothes but very ragged morals.

People who have an idea they are religious mainly because they feel bad.

People who wouldn't kill a chicken with a hatchet, but who try their best to kill their neighbors with their tongues.—*Ram's Horn.*

The Scholar and the Parrot.

A learned scholar possessed a parrot which was always in his study. It sat upon the back of his chair and picked up some phrases in Greek and Latin, as well as some of the wise comments the scholars muttered as he pored over his books. Every day students came to the scholar in pursuit of knowledge.

It happened that the scholar fell sick, and for many days was unable to attend his class. On recovering, he returned to his study and found the parrot from its perch on the back of his chair holding forth to a much-augmented class, which stood lost in admiration.

"My friends," said the scholar, "to seem to know a thing contents you more than to know it really. I resign my charge, and henceforth the parrot shall be your teacher."

And, strange to say, when the scholar left them with the parrot the students were well pleased.—*H. Helmick in May St. Nicholas.*

QUESTION DEPARTMENT.

FOR G. F. C.—(1) Hamblin Smith's Arith., page 72, V. 4.

If John had *not* spent the \$40 he would have had \$80 or $\frac{4}{7}$ of the first remainder.

\therefore \$80 = $\frac{4}{7}$ of the 1st remainder.

\$140 = $\frac{7}{4}$ or all "

If he *had* spent the \$80 he would have had \$60 or $\frac{1}{3}$ of the original. \therefore The original sum = \$180.

(2) Hamblin Smith's Arith., page 146, I. 3.

By referring to page 130 it will be seen that in 400 years there are 97 leap years.

That is the correction = 97 days

But it should = 400 (5hr. 48min. 49.7sec.) =

96d. 21hr. 31min. 20sec.

\therefore 97 days in 400 years is 2hr. 28min. 40sec. too much.

\therefore In 12,000 years the error would = 30(2hr. 28min.

40sec.) = 3d. 2hr. 20min.

(3) Hamblin Smith's Arith., page 198, II. 4.

40% for working expenses

54% for dividends

\therefore 6% = remainder = \$42,525

\therefore Dividends = $9 \times \$42,525 = \$382,725$

But $3\frac{1}{2}\%$ on the dividends = \$382,725

\therefore the dividends = \$10,935,000.

FOR W. S. K.—Hamblin Smith's Arith., page 198, III. 3.

$2\frac{1}{2}\%$ Males + $2\frac{1}{2}\%$ Females = $10\frac{1}{4}\%$ Females — $7\frac{1}{2}\%$ Males

\therefore 10% Males = $7\frac{3}{4}\%$ Females

\therefore 40% Males = 31% Females

\therefore 40 times Males = 31 times Females

\therefore The Males are to the Females as 31 to 40.

(2) Hamblin Smith's Arith., page 214, Ex. 46.

Loss \$92 — \$85 = \$7

Income from \$92 = \$3 per year

" " \$85 @ 5% = \$4 $\frac{1}{4}$ per year

Gain \$1 $\frac{1}{4}$ in one year

1 " $\frac{1}{1\frac{1}{4}}$ "

7 " $\frac{7}{1\frac{1}{4}} = 5\frac{3}{4}$ years

(3) Hamblin Smith's Arith., page 216, II. 2.

If the goods are marked \$100 they would sell for \$90.

In the *first case* the \$90 would be paid 3 months before due.

Pres. worth of \$90 for 3 mos. at 5% = 88 $\frac{3}{8}$

\$100 — 88 $\frac{3}{8}$ = \$11 $\frac{1}{8}$

In the *second case* there would be interest on \$90 for 3 months @ 5%

The amount would be = \$91 $\frac{1}{8}$

\$100 — \$91 $\frac{1}{8}$ = 8 $\frac{7}{8}$ disc.

H.—Please give general and detailed analysis of the following:

"He who reigns within himself, and rules
 Passions, desires and fears, is more a king.
 Which every wise and virtuous man attains;
 And who attains not, ill aspires to rule
 Cities of men, or headstrong multitudes."

(See form for general and detailed analysis in December, 1893, REVIEW, which is too complex to be repeated here.) A compound sentence, consisting of two principal clauses.

Prin. A, he (subject), is a king (predicate), more (extension of manner, degree).

Sub. a^1 (attributive to "he") who (subject), reigns (predicate), within himself (extension of place).

Sub. $2a^1$, (attributive to "he"), and (connective) who (subject), rules (predicate), passions, desires and fears (object).

Sub. a^2 , (attributive to a^1 and $2a^1$), every man

(subject), wise and virtuous (enlargement of subject), attains (predicate), which (object).

Prin. B, and (connective), "who attains not," or he understood (subject), aspires (predicate), to rule cities * * * multitudes, complement of "aspires" ill (extension of manner).

Sub. *b*¹, (substantive—subject of "aspires"), who (subject), attains (predicate), this, understood, (completion) not (extension).

The clause beginning with "which" may also be considered as principal, which—and this. Supplying "he" in the second principal clause would make it the subject, and the subordinate following an attributive clause to "he." "More a king" implies an ellipsis, such as, than the mere wearer of a crown.

G. R.—The pupils of our school have been issuing a paper, for the last two years, by writing their contributions on narrow slips of paper and pasting them on a piece of cardboard. Last winter a typewriter or small printing press was suggested. I told the boys that we would help them, but thought they would appreciate it more if they helped to raise the money. They have succeeded in getting \$10.00 towards it. We have been offered a small hand press for \$25.00 with type and all other fixtures. Now I would like your opinion as to which would be the most useful article, considering cost, durability, etc.

A small handpress and type would probably prove a losing investment. The press would soon get out of order. The type setting, for even a small paper, would make great demands on the time of the pupils. Type setting and printing are arts. If badly learned the knowledge is worse than useless. A well printed paper could scarcely be expected, and there are too many badly printed papers now. Advise the scholars not to add to the number.

Concerning the typewriter: It would be a valuable addition to the school apparatus, and a clean and neatly printed paper could be produced by a fairly good typewriter. The pupils would learn what would be more useful than a bad attempt to learn the "art preservative." But a good typewriter costs something. If you could get a good second hand one at a reasonable rate, and in good repair, it would serve better than a printing press.

I think nothing would be better than to have your paper published in the following way: Have each contributor hand in his or her contribution neatly and legibly written on uniform paper. When publishing day arrives have these contributions arranged in order, under title page, date, etc., and paste them in a "Mark Twain" scrap-book, one of which would be sufficient for a year's papers and would form a neat and convenient volume for your library. This would be better than a poorly printed or a badly type-written paper. Further, if only plainly written and neat con-

tributions be received by the editor or editors, the paper could be made of great value to the school as a stimulus to improved penmanship, and no volume in the library, in after years, would be studied with more interest than a yearly volume of such a school paper.

E. A. C.—Please answer the following, if space permit, in the REVIEW :

Meiklejohn defines a compound sentence as being one which consists of two or more simple sentences packed, for convenience sake, into one. Again he says: A compound sentence contains two or more simple sentences of equal rank. In no place does he say that a compound sentence may contain a subordinate clause.

(a) May a compound sentence contain a subordinate clause?

(b) What kind of a sentence is the following: The person of whom you spoke died yesterday and will be buried tomorrow.

(a) Yes. (b) A compound sentence.

The dispute that our correspondent speaks of—"that a compound sentence cannot contain a subordinate clause"—is easily settled. It may contain as many as the sense or a proper arrangement requires.

MONCTON.—Will you kindly answer the following questions in REVIEW :

(1) Is there any alcohol in the juice of the apple as taken from the fruit?

(2) Will you kindly discuss methods of dealing with "impertinence" in a pupil 14 years old.

(1) No. The juice must undergo fermentation to become alcohol.

(2) It were better that pupils should not *approach* the impertinent stage. An ounce of prevention is worth a pound of cure. Where teacher and scholars are in sympathy there should be no such thing as a scholar being impertinent. Some scholars may have a rough or abrupt manner, and this may savor of impertinence where none is intended. The teacher should be careful to discriminate in such a case. Impertinence, pure and simple, should be treated summarily, the pupil dismissed from the class for the time, and kept from the recitation room until he satisfies teacher and class for the insult.

[The editor of this department regrets that some of the above questions have remained several months unanswered. He did not feel like grappling with them in vacation, and he trusts that those who had the same feeling (laziness, if you like) will pardon the unintentional neglect with which their communications have been treated. Again: one of our correspondents modestly asks the editor to solve eleven exercises on pages 55 and 56, Hamblin Smith's Geometry. Will the correspondent please take a trip to Halifax where the mathematical editor lives.]

Course of Instruction for Grammar and High Schools.—
September, 1894.

The trustees of grammar schools and other high schools, shall make provision for instruction in Latin and Greek or French for all pupils desiring to prepare for university matriculation, or to complete the classical course of the grammar schools. For other pupils these subjects will be optional, and to the latter a more extensive course in English, mathematics and science will be given by the teacher as time may permit.

GRADE IX.

Language —

English : Reader No. VI. Critical study of a play of Shakespeare as announced from year to year. (For 1894, Merchant of Venice. For 1895, The Tempest) Supplementary reading as directed by the teacher. Meiklejohn's English Language, Part I.—Orthography, etymology and syntax ; parsing and analysis. Part II.—Composition, punctuation, figures of speech, paraphrasing.

Latin : Robertson and Carruther's Primary Latin Book, Part I. completed, together with fourteen exercises of Part II. ; or Bryce's First Latin Book, completed ; Cæsar, Gallic War, book first, begun.

Greek : Grammar through declensions of nouns, adjectives, and pronouns ; and conjugation of one regular verb, together with easy reading exercises, as in Bryce's First Greek Reader ; or

French : Grammar to the end of regular verbs with exercises as in Pujol's French class book. Translation of Parts I. and II. of Introduction to the Course of Literature, or an equivalent from other texts.

Mathematics.—

Arithmetic : Hamblin Smith's Arithmetic, with special attention to the commercial rules ; book-keeping, single entry.

Geometry : Euclid, Book I. with exercises.

Algebra : To the end of simple equations of one unknown quantity.

History and Geography.—

Leading events of British and Canadian history during the present century, as in prescribed text books. Commercial and physical geography of North America and Europe.

Drawing.—

Free hand, model and object drawing ; industrial designs ; construction of geometrical figures by scale.

Natural Science.—

Physics : A short course of quantitative experiments including properties of matter, fluids, mechanical powers, heat, light, sound, magnetism and electricity. (The pupils to be required to make measurements, calculations, and deductions for themselves) High school physics by Gage and Fessenden recommended to teachers.

Physiology and Hygiene : Text book, Our Bodies and How we Live.

Note.—Occasional field excursions, under the leadership of teacher, for the purpose of observing and studying the minerals, plants, animals and physical features of the neighborhood, are strongly recommended.

GRADE X.

Language.—

English : Critical study of an author prescribed from year to year. (For 1894, Macaulay's essay on Warren Hastings. For 1895, Walter Scott, The Lady of the Lake.) Supplementary reading as directed by the teacher. Meiklejohn's English language ; parsing and analysis continued as in Part I. ; word-building and derivation ; composition and prosody ; Part II. reviewed and completed.

Latin : Robertson and Carruther's Primary Latin Book, Part II. completed ; or synopsis of syntax, as in Bryce's Second Latin Book ; Cæsar, Gallic War, Book I. completed ; Æneid, Book I. begun.

Greek : Bryce's First Greek Reader, completed ; or

French : Grammar (including the conjugation of principal irregular verbs) with exercises as in Pujol's French Class Book ; translation of anecdotes, and pages 344 to 362 of *Cours de Littérature*, or an equivalent from other texts.

Mathematics.—

Geometry : Books II. and III. with exercises.

Algebra : To the end of quadratic equations.

Book-keeping : Double entry.

History and Geography.—

Swinton's Outlines of General History, Sections I., II., III. Commercial and physical geography, continued. Geikie's Lessons on Physical Geography, recommended for teachers.

Natural Science.—

Chemistry : Williams' Introduction to Chemical Science to chap. xxx.

Botany : The practical study of representatives of the leading families of flowering plants. Drawing and tabular description of plants studied, and their determination with the aid of text-book (Spotton) Field excursions, as before, recommended with systematic collection and preservation of plants.

Note.—It is recommended that chemistry be taken up from November to May, and botany during the rest of the year.

GRADE XI.

Language.—

English : Meiklejohn's English Language, Part III. Critical study of authors as prescribed from year to year. (For 1894, Scott, Quentin Durward ; Longfellow, Evangeline. For 1895, Scott, Ivanhoe ; Lowell, Under the Old Elm and other poems, Houghton, Mifflin & Co., Boston.) Theme and essay work.

Latin : Virgil's Æneid, Book I. completed. Cicero, *In Catilinam*, Or. I. Latin prose composition.

Greek : Xenophon, Book I., chapter i-iv. Homer's Iliad, Book I, vv. i.—303. Goodwin's Greek Grammar, or

French : Pujol's French Class Book, pp. 362-382 and 435-445 ; or an equivalent from other texts. French prose composition.

Mathematics.

Geometry : Book IV. with deductions. Definitions of Book V. and Book VI.

Algebra : Text-book completed.

Trigonometry : Plane trigonometry with applications. Mensuration of surfaces and simple solids.

History and Geography.—

Swinton's Outlines of General History, completed. Physical and astronomical geography.

Natural Science—

Chemistry: Text-book completed
 Botany: Microscopic structure of plants. Plant food, how absorbed. Growth and assimilation (Spotton). Study of flowering plants continued, as in Grade X., with representatives of the flowerless plants. Field excursions recommended, as in Grade X.

GRADE XII.

Trustees of grammar and other high schools are recommended to make provision as soon as practicable for a fourth year's course of instruction. This syllabus is designed to complete the preparation of candidates for grammar school license, and for the senior leaving and senior matriculation examinations.

Language—

English: Meiklejohn's English Language, Part IV. Critical study of authors as required for first year in the University of New Brunswick.

Latin: Horace, Odes, Book I, and Ars Poetica. Cicero, Pro Archia and De Senectute.

Greek: Homer, Iliad, Book VI. Xenophon, Anabasis, Book II. Euripides, Alcestis.

Mathematics.—

Geometry: Euclid, Books VI., XI. and XII.

Spherical Trigonometry: (Wentworth's) Advanced Algebra.

History and Geography.—

Green's Short History of the English People, chapter vi. and vii. Grecian and Roman History and Ancient Geography.

Natural Science—

Physics: As in Gage and Fessenden's High School Physics; or, Astronomy: Young.

Geology: Geikie's Field Geology.

Note.—Instead of Greek the course in French may be continued, or a year's course in German may be substituted. Pupils who do not take either Latin or Greek will, in addition to the above course in English, mathematics and natural science, take a course in psychology as in James's Text Book of Psychology (MacMillan & Co) or additional work in natural science, as the teacher may direct.

SCHOOL AND COLLEGE.

Inspector Smith is visiting the schools of Botsford, Westmorland County, this month, and will be in Kent County during October.

Important changes have taken place in the New Glasgow schools since they were last in session. Miss Archibald has resigned from the high school in favor of Dr. Magee, of Digby. As a scholar and as a teacher, Dr. Magee probably has no superior in the public schools of Nova Scotia. While principal of Digby Academy his pupils were generally successful in passing the provincial examinations. He also taught in the normal school at Truro, for one year. New Glasgow is to be congratulated on having secured for its high school such a ripe scholar and excellent teacher. Mr. Creswick, whose

failing health compelled him to retire, is succeeded by Mr. McKenzie, late principal of the Westville schools. Miss Cameron retires in favor of Miss E. Munro.

R. S. Campbell of Tatamagouche has been appointed principal of Baddeck Academy. We wish him every success in carrying on the excellent mental and moral discipline inaugurated by his predecessor.

The large new school of eight departments in Parrsboro is approaching completion. Next after Amherst Academy and Springhill school it will be the finest in Mr. Craig's inspectorate. Mr. T. C. McKay (Grade A), and a graduate of Dalhousie College has been appointed principal. His interest in science will not grow less in a locality so rich in minerals and botanical specimens.

Mr. Smith of Truro, who has been in charge of the Guysboro Academy has decided to continue his work there, as the trustees have made arrangements to supply him with a new school-house, to be constructed at the earliest possible date.

Principal Campbell of Truro Academy, has good reason to be proud of the success of his pupils at the recent provincial examinations. Under teachers such as Messrs. Campbell and Little, it would be a surprise if they failed. Additions have been made to the teaching staff. Judging by its progress since Mr. Campbell was appointed principal, Truro will not long stand second to Pictou or Halifax in its academic work.

Mr. W. T. Kennedy, the energetic financial manager for Nova Scotia of the REVIEW, has been appointed to the principalship of the Halifax Academy. In 1878 he entered the Halifax schools as principal for Richmond, at a salary of \$585. In 1883 we find him principal of Albro street school, with a salary of \$800, which was increased to \$1000. Here he showed great capacity for making his pupils and assistants do all the work of which they were capable. Assisted by Miss Shields and Mr. Thomson, he prepared his pupils to enter the academy nearly two years earlier than they were got ready in any other school. In 1888 he was placed in charge of a supplementary department of the academy. Here the thoroughness of his work was very marked. Dilatory pupils from the various schools surprised their parents with evidences of an earnestness in work, never before shown by them. There were no drones in the hive. Upon the resignation of Prof. Murray, his place as teacher of classics was filled by Mr. J. W. Logan, B. A.; but for the principalship Mr. Kennedy was without a competitor and was appointed without application at a salary of \$1600. In assuming the principalship of the academy Mr. Kennedy is particularly fortunate in being supported by Mr. Logan, who made a most brilliant record in his classical studies.

Several changes, some of them of doubtful utility, have been made in the Dartmouth public schools. Miss Hopkins and Miss Ellis, both superior teachers, will teach the seventh and eighth grades under a vice-principal of a lower grade. If these higher grades had been placed in the high school building directly in charge of the principal they would do much better work, while the vice-principal's position would have been more appropriate and comfortable.

The schools of Windsor have opened with every prospect of a good year's work. Meeting with the principal in the

streets a few days ago, we felt confirmed in the belief that the human race is not degenerating physically, and that there does not exist the academy which he could not manage. He finds work enough, however, in preparing his pupils for first class license, without attempting collegiate work in the form of grade A, which should have no place in any academy, and which greatly interferes with the thoroughness of the work of other grades. Miss Dimock has been promoted and her place filled by the appointment of Miss Begg of Kentville.

Mr. C. C. Waterbury of the Art Student's League, New York, has been appointed head master of the Victoria Art School in Halifax, to succeed Mr. Dodge, whose articles on drawing were so much valued by the readers of the REVIEW last winter. Mr. Waterbury has high testimonials from such artists as Chase, Mowbray, Beckwith, Fitz, and others.

King's College, Windsor, in common with many other colleges, has been for the last few years seriously crippled financially. The tide appears, however, to have turned. The serious nature of her difficulties seems to have aroused for her the sympathy of those who should be her friends. The efforts made to raise funds are meeting with success and creating a new interest in our oldest college, and one of our best; the only one that holds its charter from an English sovereign. Her professors have set a good example of devotion by subscribing \$580 00. By good management \$2000 have been added to the right side. A systematic canvas for regular contributions already shows that she will not only be able to continue the work of the past, but that she can enlarge her sphere of usefulness. The church school for girls was from the beginning, and still is, an unqualified success both financially and educationally.

As announced in the August REVIEW, Sept. 3rd, was a school holiday, and the teaching days for the term will be decreased by one.

In order to enable the Chief Superintendent of Education to be present, the date of the Charlotte County Teachers' Institute has been changed to October 4th and 5th. It meets at St. Andrews.

A school library, consisting of seventy-nine volumes has been purchased by Miss Marion Lingley, teacher at South Bay, St. John County.

Miss Madeline Sisson of Fredericton, has been appointed teacher of one of the St. Stephen primaries. She comes well recommended by Secretary Sampson and Principal Mullin.

Mr. George A. Inch, B. Sc., has been appointed additional instructor in the N. B. Normal School.

Inspector Carter will be engaged during September and part of October, with the schools on the main land of Charlotte County. During the remainder of October he will visit the schools in Westfield and Greenwich, Kings County, and schools in St. John County.

Many old teachers will learn with regret the sudden death of J. W. Caulfield, Esq.

Mr. Caulfield taught for a long time, and with much success the superior school at Westfield station. He was an excellent business man, and was very popular in Westfield,

which parish he many times represented in the Municipal Council, and at one time filled the position of Warden of Kings County.

Mr. W. W. P. Starratt has taken charge of the superior school at Elgin Corner, Albert County. He succeeds Mr. H. B. Steeves who has resigned to take up an advanced course of study.

Stanley C. Downey, A. B. (U. N. B.) has charge of the school at Elmhurst, Kings County.

Miss Frances Everett, B. A. (U. N. B.) is teaching at Anagance, Kings County.

Inspector Steeves expects to spend the latter part of September and October in Albert County.

The N. B. Normal school opened at Fredericton on the 4th September with a class of 255 students. The classification as regards religion is as follows: Baptists, 64; Roman Catholics, 55; Methodists, 41; Presbyterians, 40; Episcopalians, 33; F. C. Baptists, 22.

The Charlottetown and Summerside schools and Prince of Wales College re-opened after the midsummer holidays on Tuesday, the 4th inst.

Some of the P. E. I. teachers have received elementary diplomas in Tonic-Sol-Fa singing from the Summer School of Science. An effort will be made to have it introduced into the P. E. Island schools.

Ewen Stewart, Esq., supervisor of the Charlottetown schools, spent a short vacation at Ottawa. While there he enquired into the working of the Ottawa schools.

The annual convention of the P. E. I. teachers' association will be held in the Philharmonic Hall, Charlottetown, P. E. I. on September 24, 25, 26th.

A school flag has been procured by Elmsville, Charlotte Co.

BOOK REVIEWS.

TALKS ON PEDAGOGY---THEORY OF CONCENTRATION, by Francis W. Parker, principal of the Cook County normal school, Chicago. Published by E. L. Kellogg & Co., New York. Pages 491, price \$1.50. There are probably few teachers on this side of the Atlantic who have not heard of Colonel Parker and of his work in the Quincy schools, near Boston. Thousands have heard him speak and have read his talks on teaching, or some of his other writings. His eloquence, striking illustrations and his earnest gropings after the true pedagogics has made him to be much sought for at educational meetings. He has been more than any other of our teachers, the subject of controversy—we might almost say of persecution. Conservative and even moderate men have condemned his inflated oratory, his vague high sounding phrases, his ever changing indefiniteness and his apparent inconsistencies and fads. But his friends admirably followed him as a leader in the new education. They were inspired by his earnestness, and when sufficiently balanced by common sense they made grand teachers and leaders in educational progress. We give a few quotations to illustrate a peculiarity of Parker's style. Speaking of the infant, he says: "The spiritual breath of external life comes with musical cadences." Again "The child's

whole being is a unit of action;" "The spontaneous tendencies of the child are the records of unborn divinity." He speaks of the "approximating unity of the human being;" "all study has for its sole aim, the knowledge of the invisible;" "all conscious activities (of the child) are non-spacial and non-ponderable."

One page of Parker's writings may contain more nonsense but at the same time, more inspiration than a whole chapter of our favorite educational classic, Fitch's Lectures on Teaching. It is possible that notwithstanding some absurdities and extravagances, improved methods in teaching may be traced to Parker long after Fitch is forgotten. Every teacher who can read this book should do so. We give elsewhere some of his most striking thoughts in his own words.

SCHILLER'S "MARIA STUART," annotated, by Lewis A. Rhodes, Ph. D., published by D. C. Heath & Co., will prove a delightful addition to the library of any German student. The introduction is a charming piece of composition, apart from its educational value. It is a pleasure to meet the German type in the play, instead of the English characters which disfigure so many school editions of late years. The notes explain the most difficult points, without leaving too little for the pupil to work out. The only drawback is the want of a vocabulary. With this addition, a more complete and pleasing German school classic could not be desired.

ASPECTS OF MODERN STUDY, being University Extension Addresses, by Lord Playfair, Canon Brown, Mr. Goschen, Mr. John Morley, Sir James Paget, Prof. Max Muller, Duke of Argyll, Bishop Westcott, Professor Jebb. Boards, pp. 197. Price, 2s. 6d. Publishers, MacMillan & Co., London. Full of new ideas, new methods of work for University extension lecturers, it shows what rapid strides have been made in this department of learning.

THE GATE TO THE ANABASIS, by Clarence W. Gleason, A. M. Publishers, Ginn & Co., Boston, Mass. This book is the result of actual work in the class-room, and as such will be found admirably adapted for the use of students. The aim of the book is to disburden the text provisionally of its greater difficulties, so that the learner may be introduced as early as possible to a study of connected prose, and be enabled to take up the complete text of the author, much sooner than he could otherwise do. Following the text is a colloquia intended to give practice in speaking Greek, an added interest to the lessons and useful practice in forms and syntax.

A HISTORY OF THE UNITED STATES, by Allen C. Thomas, A. M., Professor of History in Haverford College, Pennsylvania. Pp. 410+lxvii. Cloth; price, \$1.25. Publishers, D. C. Heath & Co., Boston. This work aims to give the main facts of the history of the United States. Beginning with the discovery and colonization of America, it treats that early period with sufficient fulness, but the greater part of the work is devoted to the era beginning with 1789. Throughout the work, special attention is given to the political, social and economic development of the nation, down to the present time. The periods of the struggles with Great Britain and with the South are treated with great impartiality as the following extract may show. Speaking of the accusation of Congress against the King of Great Britain for introducing Indian warfare, after Congress had done the same, the author says, "the cruel necessities of war probably demanded that the aid of the Indians should be sought by each party, but justice must lay the responsibility on both, and a charge of inconsistency upon the American Congress as well." The

history is brought down to the present time, and the style throughout is clear and interesting. There are fourteen maps and nearly one hundred illustrations of noted persons and places; and much valuable statistical information is given in the appendices.

PRIMARY LATIN BOOK, based on Cæsar's Commentaries on the Gallic war, by C. Robertson, B. A., and Adam Carruthers, B. A. Pp. 351; cloth, price, \$1.00. Published by William Briggs, Toronto. This book, prepared for the schools of Ontario, has been adopted for New Brunswick schools. It is very complete as a class-book, Part I. containing seventy introductory lessons with exercises. The work keeps constantly in view the fact that Cæsar is the first author read in a Latin course, and scarcely any words or phrases are met with which are not taken from Cæsar. Part II is devoted to syntax and composition, the exercises being modelled after the style and vocabulary of Cæsar. Part III has an accidence, compendium of syntax, and vocabularies. The arrangement of the book is good, the accidence and vocabularies being separate from the introductory lessons, will teach the pupil more self reliance. It is a sufficient book of reference for pupils in their high school course, taken in connection with Cæsar and Virgil.

PRACTICAL LESSONS IN PHYSICAL MEASUREMENT, by Alfred Earle, M. A., senior science master at Tonbridge school. Pp. 350; cloth; price 5s. London, MacMillan & Co., and New York. This work is intended to provide the pupils in schools with abundant means of practical work, as a help not only to their mathematical and scientific studies, but also to their English, as they are required to record observations in accurate language. The book deals only with measurements of length, mass and time, the author believing that a mind which has been trained to observe and compare accurately is most likely to acquit itself well in the world, and that a training in physical measurement is the most solid basis of scientific knowledge.

ELEMENTARY LESSONS IN ORGANIC CHEMISTRY, by G. S. Turpin, M. A. (Camb.) D. Sc. (Lond.) principal of the technical school, Huddersfield. Pp. 140; cloth; price 2s 6d. London, MacMillan & Co., and New York. This will be found a very complete and satisfactory little work for beginners in organic chemistry. Each step is illustrated by experiments and examples.

GRIMM'S FAIRY TALES, Part I., edited by Sara E. Waltz, illustrated by Caroline S. King. Pp. 237; boards; price 45cts. Published by Ginn & Co., Boston, Mass. The typographical appearance of this book is excellent, type large, with clearly printed pages. The tales chosen are interesting, all those of a possibly harmful nature being rejected, and those chosen tending to have an elevating effect.

PLANE TRIGONOMETRY for the use of colleges and schools, by I. J. Birchard, M. A., Ph. D. 263 pages, price \$1.25. Published by William Briggs, Toronto. We have much pleasure in welcoming a Canadian work in this difficult subject. As far as the variety of topics taken up is concerned, Mr. Birchard has given a full presentation of the subject matter of elementary trigonometry. The first twenty-five pages are taken up with an exposition of the trigonometrical ideas of lines and angles. The treatise then deals with trigonometrical ratios and the relations between these. The student is taught to find the unknown elements of a triangle, first by the use of the natural sines, etc., then by the use of the logarithmic tables. To facilitate this work, tables of logarithms and trigonometrical functions are given at the back of the book. The use of these tables is quite fully explained. Two chapters are

devoted to properties of inscribed and circumscribed circles, the nine-points circle, etc. The exercises are numerous but rather difficult. Sets of examination papers are given in the appendix. The matter taken up and its arrangement is somewhat the same as that in Locke's elementary trigonometry. The proofs are not, however, so full; nor is there such an abundance of easy exercises for the student. The concise way in which the book is written, and the difficult examples will help the student of good mathematical mind, or one who is fortunate enough to be under a good teacher, in the subject.

While admiring the systematic way in which the author has developed the theory of his subject, we would suggest that for the average student it is better not to introduce too many new definitions at the beginning of a book. Our ideal trigonometry for a high school would commence with simple problems in the solution of right-angled triangles. A large number of examples should be given at this stage. The idea of the sine, tangent, etc., would be clearly fixed in the student's mind. Then when the ideas of negative lines, angles larger than four right angles, etc., can be developed, the need for the conceptions can be more easily seen.

The relations between the ratios and the solution of oblique-angled triangles would follow. The radian and the more theoretical portions of the subject would come last of all. While making these criticisms we can recommend the book as being concise and well arranged in form, as being well adapted for the ground-work for an advanced study of the subject.—T. C. M.

The September Magazines.

The September number of *The Chautauquan* opens with a richly illustrated article on "Venetian Fetes—Past and Present," by F. Cooley; "Englishmen who won Fame in India," is the subject of an entertaining sketch, by S. Parkes Cadman; Cyrus C. Adams tells of the recent remarkable change in the methods and purposes of African research. Meadville,

Pa., \$2.00 per year. . . . In the September *Forum*, Dr. J. M. Rice writes on "Teaching by Travel: a school excursion from Indiana to Virginia, recommending the adoption by our public schools of the German method of instruction by means of school excursions, and it describes one lately made by the Anderson (Ind.) school, which lasted seven days, covered a distance of 1,800 miles, and eminently successful in every way. . . . *The Century* for September contains two entertaining papers adapted to the season for the re-opening of the schools, the first being an account of "School Excursions in Germany," by Dr. J. M. Rice, author of the volume, "The Public School System of the United States." This paper includes a record of an excursion of this kind in which Dr. Rice participated, and has the advantage of being the first article on the subject printed in America, where the idea of school excursions has already taken root, and promises to spread. The other paper is on "Playgrounds for City Schools. . . . *St. Nicholas* for September has "Two School-houses and a Shipwreck," by Isabel Marbury, an account of the succouring of the crew of an American vessel by the Japanese, and the building of school houses with the money granted them by Congress for their humanity. . . . In *Littell's Living Age*, (Boston) for Sep. 1, there is a most instructive article on "Iceland To-day," containing an account of the physical features, products and habits of the people of this curious country. . . . Prof. James Sully of University College, London, heads the list of contributors to the September *Popular Science Monthly*, with the second of his studies of Childhood, dealing with the imaginative side of play. He shows by means of many incidents how strong is the power of "making believe" that enters so largely into children's plays. Dr. H. G. Armstrong, F. R. S., has a strong article on scientific education, and what it should do for the young. . . . In the *Atlantic Monthly* for September, William Davies contributes an able article on "The Religion of Gotama Buddha," and "An Entertaining Scholar," by Harriet Waters Preston and Louise Dodge, adds to the interest and instructiveness of the issue.

O. B. C.
26th Year

GOING TO BUSINESS COLLEGE?
 You Should Send for the 170 Page
 Illustrated Catalogue of the Famous
ONTARIO BUSINESS COLLEGE,
 BELLEVILLE, ONT.
 Large attendance from
 the Maritime Provinces.
 TO ROBINSON & JOHNSON

CHROMO REWARD CARDS.
 Thousands of New Pretty Designs Flowers, Fruits, Scenes, Views, Crescents, Shields, Easels, Juveniles, Vases, Ships, Birds, Animals, Balloons, Anchors, &c. Prices for 12 cards; size 3x4 1/2 inches 6c; 3 1/2 x 5 1/2 12c; 3 1/2 x 5 1/2 embossed 15c; 4 1/2 x 6 1/2 20c; 5 1/2 x 7 1/2 35c; 7x9 50c. All beautiful Reward and Gift Cards no two alike. **Samples sent free to teachers.** New Price List of School Supplies, Chromos, Plain, Embossed, Frosted, Silk-Fringed, Chromo Reward and Gift Cards, Reward, Gift, and Teachers' Books, Speakers, Dialogues, Reports, Aids, and few samples Chromo Reward Cards free. All postpaid. Address, **A. J. FOUCH, WARREN, PA.**



THORNE BROS., Hatters and Furriers, 93 King Street, St. John, N. B.

10 Per Cent. Discount
 ALLOWED TO SCHOOL
 TEACHERS ON
GOLD AND SILVER WATCHES AT
 A. & J. HAY'S, 76 KING STREET,
 ST. JOHN, N. B.



PATENTS
 CAVEATS, TRADE MARKS
 COPYRIGHTS.

CAN I OBTAIN A PATENT? For a prompt answer and an honest opinion, write to **MUNN & CO.**, who have had nearly fifty years' experience in the patent business. Communications strictly confidential. A **Handbook of information concerning Patents** and how to obtain them sent free. Also a catalogue of mechanical and scientific books sent free.

Patents taken through Munn & Co. receive special notice in the **Scientific American**, and thus are brought widely before the public without cost to the inventor. This splendid paper, issued weekly, elegantly illustrated, has by far the largest circulation of any scientific work in the world. \$3 a year. Sample copies sent free.

Building Edition, monthly, \$2.50 a year. Single copies, 25 cents. Every number contains beautiful plates, in colors, and photographs of new houses, with plans, enabling builders to show the latest designs and secure contracts. Address **MUNN & CO., NEW YORK, 361 BROADWAY.**

EVERY SCHOOL should possess a copy.
ENTIRELY NEW EDITION
Chambers's Encyclopædia.

A dictionary of universal knowledge, with Maps and Wood Engravings. In 10 Volumes, Imperial 8vo. Price, cloth, \$3.00 each, half morocco, \$4.50. Vols I, II, III, IV, V, VI, VII, VIII, IX, are now ready.

SOLD BY
W. DRYSDALE & CO.,
 232 St. James St., Montreal.

Headquarters for Books of all kinds. Special rates to teachers.

GINN & COMPANY

INVITE ATTENTION TO

ALLEN & GREENOUGH'S LATIN SERIES.

Grammar; Cæsar, Cicero, Virgil, and Ovid, with full introductions, notes, vocabularies, maps and illustrations; Collar & Daniell's Beginner's Latin Book; Collar's Practical Composition, etc.

"There is no work of its size and scope which seems to me so complete" [as the A. & G. Grammar]. Professor Tyrrell, Trinity College Dublin.

This Grammar is *facile princeps* among its rivals." Professor D. Comstock, Phillips Andover Academy, Mass.

"The Beginner's Latin Book appears to me admirably suited for introducing young students to that difficult language." Oscar Browning, King's College Cambridge.

GOODWIN & WHITE'S GREEK SERIES.

Grammar, Lessons, Beginner's Greek Book, (on the plan of Collar & Daniell's Beginner's Latin Book), Anabasis with vocabulary, and Seymour's Iliad with illustrated vocabulary.

"I know of no Greek grammar for English-speaking students that combines so many merits in so attractive a form." Professor D'Ooge, University of Michigan.

The special Canadian edition of the Beginner's Latin Book and Allen & Greenough's Latin Grammar is ready; retail prices, respectively, \$1.00 and \$1.30. T. C. Allen & Company of Halifax are agents for this and other books in the Maritime Provinces, and carry a stock constantly.

GINN & COMPANY, Boston, New York, Chicago and London.

WENTWORTH'S MATHEMATICAL SERIES.

"The most popular books of the past decade." Arithmetics, Algebra, Geometry, Trigonometry, etc.

In the United States there are not less than 200 colleges and 3,000 schools which use the Algebra, Geometry, Trigonometry or all of these; and the books may be found in leading institutions in Great Britain, Turkey, India, China, Japan and the Hawaiian Islands.

GAGE & WILLIAMS' NATURAL SCIENCE.

Elements of Physics (Gage), Introduction to Physical Science (Gage), Introduction to Chemical Science (Williams), Laboratory Manual of General Chemistry (Williams).

"I have not only examined but studied the Physical Science, and consider it superior as a text book to any other I have seen." Principal DeBoer, High School, Montpelier, Vt.

"I cordially recommend the adoption of Williams' Chemical Science in secondary schools." A. Ogilvie, Gordon's College, Aberdeen, Scotland.

Also many other valuable text books described in our full Catalogue, which is sent free on application.

Re-opening of Schools.

TEACHER!

It will Pay you to have the LATEST Information about Educational Appliances.

• • • Our 1894 and '95 Catalogue • • •

OF AND ABOUT

Will be sent FREE if you ask for it.

All Inquires answered and Information given Promptly.

SCHOOL BOOKS, SCHOOL STATIONERY,
SCHOOL MAPS, SCHOOL GLOBES,
SCHOOL PENS, SCHOOL REQUISITES.

T. C. ALLAN & CO.,

HALIFAX, N. S.

GRAND PROVINCIAL EXHIBITION

Under the Management of The Halifax Exhibition Commission,

WILL BE HELD AT HALIFAX, SEPTEMBER 25th, 26th, 27th, and 28th, 1894

• • • THE PRIZES INCLUDE • • •
OVER \$1,000 IN CASH, AND MEDALS OF SILVER AND BRONZE.

Send or call at the office of the Secretary for Prize List and Entry Forms, and make early application for space. All entries must be made on or before the following dates:—Live Stock, Poultry, Dogs, Dairy Produce, Ladies Work, Fine Arts and all classes of Manufactures, Saturday, August 25th. Grain, Field Roots, Fruits, and Horticultural Products, Saturday, September 15th.

W. E. THOMPSON, Secretary.
43 SACKVILLE STREET,