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The Canada School Journal.

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CANADA SCHOOL JOURNAL HAS RECEIVED

*An Honorable Mention at Paris Exhibition, 1878.
Recommended by the Minister of Education for Ontario.
Recommended by the Council of Public Instruction, Quebec.
Recommended by Chief Superintendent of Education, New Brunswick.
Recommended by Chief Superintendent of Education, Nova Scotia.
Recommended by Chief Superintendent of Education, British Columbia.
Recommended by Chief Superintendent of Education, Manitoba.*

The Publishers frequently receive letters from their friends complaining of the non-receipt of the JOURNAL. In explanation they would state, as subscriptions are necessarily payable in advance, the mailing clerks have instructions to discontinue the paper when a subscription expires. The clerks are, of course, unable to make any distinction in a list containing names from all parts of the United States and Canada.

AMENDMENTS TO THE ONTARIO SCHOOL ACT.

In the Official Department of the present number of the JOURNAL will be found the amendments to the Public Schools Act, made during the present session of the Ontario Legislature. Section one gives rural trustees the power to open the schools on the third instead of the eighteenth of August. The legal holidays are not changed, six weeks are still to be regarded as the regular vacation, and no government or municipal allowance will be given for this time. It is to be regretted that miserable jealousy of the teacher should lead to an agitation in favor of shortening the summer vacation. Such an agitation has begun, however, and promised to assume large proportions. Probably no better way could have been taken to meet and stop this agitation than that adopted by Mr. Crooks. He promptly met and objected to the passage of the amendment of Mr. Watters to reduce the midsummer holidays to three weeks, and introduced his own amendment, which is to be of a temporary nature, unless largely adopted by rural trustees throughout the province. We hold that it is decidedly wrong to reduce the vacation in summer. It is unwise in the interests of pupils, parents and teachers. If, however, trustees largely avail themselves of the provisions of the amendment, we hope they will be compelled to pay the teacher for the extra time taught, and to send their children regularly, under penalty of a fine for every day's absence not caused by sickness. Unless this is done, Teachers' Associations will have to become Unions, whose members will be bound not to teach a school where short holidays are insisted on by the trustees. The teachers have this question in their own hands, and we hope they will settle it properly.

Section two regulates an amendment of last session, which provided that non-residents, even if property owners, should be liable to pay fees. The present amendment allows non-residents to send their children to a school provided they have

property in the section on which they pay a sum at least equal to the average rate paid by the residents of such section. Trustees are to be allowed to charge as much as fifty cents per month for the children of other non-residents.

Section three makes needed amendments, which will tend to the easier and more equitable working of Union School sections.

Section four greatly simplifies the work of taking the school census and collecting the school rates. The township assessor is to set down in his roll the number of children between five and sixteen, and the township clerk has to make a return of the number of children of school age to the trustees of each section on or before the first day of July of each year. The expenses of assessing, collecting and paying school rates is to be borne by the municipality. Trustees will undoubtedly hail this clause with delight.

Section six makes it clear that the twenty-ninth section of last session does not apply to furniture, appliances, ordinary repairs, &c. Some rabid opponents of the public schools held that the trustees could not put in a pane of glass without calling a meeting of the ratepayers of the section.

Section eight is perhaps the most important amendment of the present bill. A great deal of litigation and other trouble has arisen from the quashing by the courts of local by-laws for the formation, alteration, or dissolution of school sections, unions, township boards, &c. This section provides that such by-laws shall be absolutely legal and valid "when they have been submitted to and confirmed by the Minister of Education." This may seem a large power to place in the hands of the Minister of Education, but it is an evidence of the need of the change, as well as a merited compliment to Mr. Crooks, that the Hon. Mr. Cameron, when leader of the Opposition in 1877, and subsequently Mr. Meredith, urged the advisability of giving even more power to the Minister of Education in settling local disputes, as well as in rendering local action valid.

Section twelve enables the Minister of Education to compel the attendance of witnesses at any inquiry "which he may institute, make or direct," without appealing to any court.

On the whole, the provisions of the amendments are desirable, and Mr. Crooks is to be congratulated on the firmness he showed in resisting encroachments on the essential principles of the law, as well as on the care shown in the preparation of the needed changes.

HIGH SCHOOL RIVALRY.

The remarkable impetus given to our High Schools by the improved regulations framed under the provisions of the legislation of 1871 marks an important period in our educational history. With a programme of studies adapted to the requirements of a new but progressive community, and the adoption of

methods of thorough instruction, new life and vigor took the place of the comparative apathy that was previously exhibited by the public towards the Grammar Schools. With increased aid from Government, and enlarged powers assigned to Boards of Trustees, the efforts put forth by local authorities have resulted in building up a class of institutions for secondary education not surpassed in efficiency by similar schools in any other land. The official reports of the High School Inspectors, and the published results of Teachers', Intermediate, University and other examinations, have furnished the public with a fair criterion of the character and efficiency of the High Schools and Collegiate Institutes. The facilities afforded the community for forming an estimate of the actual work done, have been both numerous and various, and the judgment of an intelligent public has not been far wrong.

The comparative merits of different schools have also been freely canvassed, and points of excellence or weakness have readily been discovered. When false economy on the part of Boards has kept an institution low, the enterprise and progress evinced in other towns have often aroused Trustees from a state of lethargy and indifference. Hence have followed, on the part of School Boards, a desire to procure improved accommodation and a sufficient number of properly qualified teachers, and on the part of Masters the application of the best methods of instruction and management.

So far, such tendencies furnish much reason for satisfaction, but we regret to notice here, more particularly, a feature which unfortunately has lately sprung up in connection with the progress of our schools. With a certain amount of competition we find no fault. Indeed, without comparisons between different institutions, it is doubtful if many improvements would have taken place so promptly. To gather in students from a distance is in no way objectionable, if no improper methods are adopted for such a purpose. To give, in a prospectus, a plain statement of the character and progress of a school may not be amiss, but to make references of a disparaging nature to other institutions cannot be defended. To induce students to leave localities where well-equipped schools exist, may give some temporary stimulus to an already overgrown institution, but it is extremely doubtful whether such a course is productive of lasting advantage. The tactics used by competing lines of steam-boats or rival commercial houses would scarcely appear dignified if resorted to by Collegiate Institutes. People look for different relations between educational establishments, and the "puffing" which an auctioneer might employ in selling his merchandise would scarcely answer what is expected from High School Masters zealous in advancing the character of the institutions they control. A feeling of regard for the rights of others should not be lost sight of. Like the clergyman who would not think of encroaching upon the "parish" of his brother minister, there should be some limit to the field from which a master strives to recruit his numbers. Professional respect will not justify the medical man in depriving another of his patients, and the lawyer is not expected to infringe upon the rights of his "learned friend." Similar relations are, no doubt, recognized by teachers who have, perhaps, few necessities for violating them. The student that

can be led away from a good school is seldom a very desirable acquisition for another. He who is diligent will succeed at any one of our many well-equipped High Schools or Collegiate Institutes. The winner of a University Scholarship would have doubtless been just as successful had he come up from High School B as H. S. A. The intermediate candidate who was "plucked" last summer would probably have suffered a similar fate had he attended any other than the one in which his confidence is now shaken. Nor have "hints," in the shape of superior facilities for preparing for the Matriculation or other examinations, been the only features that have appeared prominent in announcements. The prize and scholarship system has appeared, and the High School is to enjoy increased advantages by liberality in paying students to attend. We are not prepared to say where such tendencies may end, but we know the effect must be anything but elevating. If the spirit of commercial rivalry becomes prevalent among our High Schools, masters must also prepare to meet the ups and downs to which mercantile affairs are liable.

We have looked at what is no phantom from an outside standpoint, but we express the sentiments of masters themselves. At the last meeting of the Teachers' Association the matter engaged the attention of the High School Masters' Section, and we believe the feeling was unanimous in deploring the growing evil. There can be little doubt that the remedy lies principally with the teachers themselves, and in a matter in which all are more or less interested a full understanding on some of the points to which we have referred would prove quite serviceable.

COUNTY MODEL SCHOOLS.

We regret exceedingly that County Model Schools are not to receive a larger grant at present. It is also a pity that the County grant in favor of those institutions is not made compulsory. The Counties benefit from those schools more than the particular towns in which they are situated, and they should be forced to contribute to their support, in case they are not generous enough to do so voluntarily. There are many who seem to consider that the trustees of the town in which a Model School is situated should receive all the Government and County grants to be disposed of as they deem best. This we hold to be wrong. The principal of the Model School deserves recognition. He is compelled to work from one to two hours extra per day during the Model School session, and in addition to this, his professional ability and experience are or should be deserving of recognition in a tangible form. He is paid by the town for teaching his class and managing his school; he should be paid by the Government for training the Model School students. It is not right that local authorities should be allowed to give him what they think right. It is not fair to leave him at their mercy. Some School Boards have dealt fairly with their Model School masters, but they are rather the exception than the rule. The Government has laid the additional burdens on these masters, and it should make their additional remuneration a certainty, by a provision that a part of its grant shall be for the master.

GEOGRAPHICAL NOTES—AFRICA.

The great geographical discoveries of 1879 have been chiefly in the African and Central Asian direction. These have been largely promoted by the military operations in Africa and Asia. Missionary labors have also stimulated exploration. Independently, however, of the war in South Africa, geographical research has been steadily prosecuted in Central, Eastern and Western Africa. In other parts of the world the explorer has also been busy. In these "Notes" we propose to give a summary of such geographical facts as may be of general interest.

Africa.—The main source of the Niger has at length been discovered by two French explorers, M. Zweifel and M. Moustier. These gentlemen started on their journey from Port Loko, on the northern branch of the Sierra Leone river in July last. Favored by the circumstance of a friendly alliance of two hitherto hostile tribes, they were enabled to penetrate to the Koranko country, where, on the 3rd of October, after crossing several branches of the Niger, they discovered the principal head stream on the frontier of Kissi and Koranko, and, singularly enough, near a place indicated on a map by Major Laing in 1822. The Binue branch of the river Niger has also been explored by Messrs. Ashcroft and Kirk in the Church Missionary Society's steamer *Henry Venn*. The much-debated question of an outflow of Lake Tanganyika has been settled by a verification of the fact. Mr. E. C. Hore, scientific member of the London Missionary Society at Ujiji, visited the river Lukuga during the last rainy season, and found it to be a large and very swift river flowing out of the great lake Tanganyika. He also descended the stream in a canoe, and, from the summit of the Kijanga ridge on the bank, he saw the river flowing westward as far as the eye could reach in the direction of the Lualaba.

It may be noted that, in addition to English explorations of Africa, there are also expeditions for discovery in that country provided under Portuguese and Belgian auspices. The latter was organized by the International Association which met at Brussels last year.

Two valuable and devoted lives were sacrificed last year in the promotion of African exploration: Rev. Dr. Mullens and Mr. Keith Johnston. Dr. Mullens has been long known as an indefatigable minister, in India and elsewhere, of the London Missionary Society. His visit to Canada will also be remembered. The great interest he took in the mission to Lake Tanganyika led him, with much self-denial, to volunteer to proceed to Ujiji in the Spring of 1879, to aid in the organization of the Church Missionary Society there. Gifted with scientific tastes and a love of geographical knowledge, he devoted much of his time to these pursuits. Mr. Keith Johnston, son of the eminent geographer, was the leader of the East African expedition to the head of Lake Nyassa. He left England early in the year, full of physical health and spirits, but the climate proved too much for him, and he succumbed about 120 miles from Zanzibar in June last. Other African items are deferred.

Certain papers have tried to make political capital out of the question of the price of text-books for schools. It has been stated that to Dr. Ryerson belongs the credit of issuing a table of maximum prices, beyond which books must not be retailed in Ontario. We are always ready to give all praise to the "venerable chief," who for so many years and with such remarkable tact and ability controlled the educational affairs of this province; but facts are facts. It was Mr. Crooks who in 1877 fixed a maximum price list for text-books, and that price in nearly every case was lower than it had previously been. In no case was the price of a book raised, even though the mechanical construction of most of them was greatly improved.

EXTRACTS FROM THE REPORTS OF HER MAJESTY'S INSPECTORS OF SCHOOLS IN ENGLAND.

The following selections relative to the teaching done in some subjects in English public schools, will undoubtedly prove interesting. They will serve to indicate to a certain extent the character of the teaching done in many of the elementary schools. They are also valuable as giving the thoughts of the inspectors concerning the subjects named and the methods of teaching them.

Mr. Routledge believes that history might be profitably banished to Schedule IV. He is forced to describe the task of teaching history as "Herculean," when the teacher is expected "to give solid instruction (in about forty or fifty hours per annum) on the history of four centuries, condensed as it is into a melancholy record of murders and rebellions, the names and dates of battles, and dry abstracts of constitutional laws, till the minds of scholars may well become a perfect chaos."

"History," says Mr. Holmes, "is seldom taught; it presupposes a certain knowledge of geography, and if it be not taught from maps it had better be left alone." Mr. Cornish puts little value on history, if we are to judge from the following:—"History is not often taken as a subject for examination, and, judging of its value by the cases in which it has been chosen, I cannot rate it highly. Such stories as that of Alfred and the cakes, and Bruce and the spider, can be easily read in the ordinary reading books, and when you have subtracted such stories as these from the total there is not much left."

Mr. Blackiston seems to be very much of the same opinion:—"Those who have either the knowledge or the grasp to treat the subject well are very few. The attention which ought to be paid to the matter of the reading books ordinarily used in schools should suffice to impress on children's minds the essential facts of English history, without needlessly burdening their memory with names and dates, as is done when history is offered as a class subject."

As a specimen of historical teaching in elementary schools Mr. Kynnersley gives the following:—"History is seldom taken in this district. The unpopularity with school children which the Saxon kings have long enjoyed still clings to them, and teachers dread the first stage. Those who have made the first plunge find the work easy and interesting to boys. Most of the text-books used in schools are very bad. A short time ago a class under examination pleaded ignorance of Jack Cade (among others) on the ground that he 'didn't come in their book.' It turned out to be the case, and the master said that he had never heard of that eminent reformer, whose low opinion of schoolmasters would have been marvellously fortified could he have foreseen this."

In regard to grammar, there is a divided opinion. With scarcely an exception, however, the inspectors consider the requirements of the lower standards too meagre, and recommended an extension. Almost with equal unanimity there is a feeling of disappointment with the general work of the upper standards. Mr. Brewer's opinion will be endorsed by the great body of teachers when he declares that "the mental discipline of the higher branches of grammar is far above that of its mere rudiments, or of what one is obliged to accept as proficiency in history."

Mr. Cornish has a good report to give:—"The spirit with which this subject has been taken in almost all schools, and the intelligent way in which it has been taught, is one of the most encouraging facts that I have to report."

It is otherwise in Mr. Haslam's district—the neighborhood of Bradford:—"It is scarcely surprising that grammar failures should be numerous. Sometimes half the children or more in the upper standards do not truly know a verb from a noun, will of themselves attribute gender and case to what they have rightly called a verb, and yet have been made to repeat such expressions as 'prepositional phrase' and 'potential mood,' of which I do not believe one certificated teacher in fifty himself knows the true meaning."

Mr. Fitch, although not quite so strong as this, has yet a little with which to find fault:—"I am not always satisfied with the manner in which these subjects are taught. By grammar is too often understood merely the definitions of the parts of speech, the power to recognize the words in a sentence and to label them with certain technical names. By a few of the best teachers it is so handled as to enlarge the learner's vocabulary, and to give him a truer sense of the meaning, relations, and uses of words. This is done, not by beginning with nomenclature and definitions, but by taking short sentences and asking in succession what each word tells us, and what part it plays in the expression of the whole thought; by showing how one word gives birth to another; and in what ways nouns are formed from adjectives, or verbs from nouns; above all, by exercising the scholars from the first in forming sentences of their own to illustrate every logical or grammatical distinction as soon as it has been explained."

Mr. Herniman believes that "in many cases grammar is not as fully and intelligently taught as it might be even within the limits now prescribed," and Mr. Kynnersley declares that grammar "is very useful in rare instances as supplying some sort of framework for learning continental languages; but it is seldom well taught. In this respect I fear our standard is very low."

Mr. Brewer declares that analysis should be taught before parsing; but contrast his opinion with that of Mr. Warburton:—"As to grammar, my experience is that with a moderate amount of painstaking on the part of the teacher all children of average intelligence can be made sure of passing in the lower stages; but analysing, even of the very simplest kind, seems to present great difficulty to scholars, and indeed to teachers also in elementary schools. I very rarely am able to pass a child in the grammatical exercises of the fifth and sixth standards without some misgivings. An inverted sentence for instance is pretty sure to prove a stumbling-block to the former standard, and participial phrases are constantly taken for 'sentences' by the latter."

Of all the remarks on grammar, however, the most remarkable are those of Mr. J. Corrington Ley. He is greatly undecided, as will be seen from the following extract:—"Upon the value of grammar in elementary schools I offer no opinion, I confess that even now I have not entirely made up my mind as to whether I should rate it as the most or the least useful of the subjects comprised within this article—whether in fact a child is really thereby compelled to *think*, or whether things that are dark enough without are not somehow made darker by the introduction of superfluous formalities. Whatever may be the use of grammar as an instrument of education, there can be no doubt that, as a purely ancillary science, it should be made as simple as is compatible with the object for which it is taught. Your lordships decline, and no doubt for excellent reasons, to interfere at all in the matter of the choice of books for schools; but if this rule were ever to be in any degree relaxed, I should be glad to see some one book, or at least, one system, receive the imprimatur of your lordships' approbation. At present, the grammarians appear to disagree like metaphysicians. I have been in the habit of revising grammar papers of candidates for certificates of merit and for admission to training colleges, for some years, and I thought I had in this matter now at length 'swallowed all formulas.' I must confess, however, to having been somewhat taken aback whilst examining a country school not long ago, on being informed by the master, who came to the rescue of his first class, that there is *no future tense*. To one bred in the orthodox faith of the Eton Latin grammar, this was a severe shock, and I was tempted, I admit, to rehabilitate the future by invoking your lordships' authority; the imperative mood, however, has gone along with the future, and has itself been absorbed in the vast *aidem* of the infinitive."

Of geography there is little to say beyond the fact that some inspectors complain regarding the misuse of small text-books "adapted to the requirements of the Code," the infliction of rote

work upon the pupils in the way of learning definitions, and the neglect of maps and globes in giving instruction to a class. Mr. Holmes has a long essay on the subject of geography which we commend to the attention of young teachers and students in training, who may have to write a theme as an exercise in school management. He believes that the subject is at once "most popular and the most profitable," and on that text he expatiates. Mr. Ley, on the other hand, informs their lordships that he "must confess to some little scepticism as to the special value of this subject for the purposes of elementary education." Perhaps by this time he has read Mr. Holmes's essay on geography and has altered his mind on the matter, and possibly, also, he now regrets that he wrote the following:—"I suspect that, as a rule, the names of places and countries, seas and oceans, lakes and rivers, capes, promontories and islands however accurately learned, remain but nameless airy nothings, but with no local habitation in the minds or imaginations of the children. I doubt if much enlargement of the 'mental horizon' is, in fact, obtained in this way."

Mr. Morgan Owen has some words to utter on the method of teaching geography from text-books alone. He says:—"I have found that young children have been obliged to get up by heart page after page of a text-book; but when I put a simple question to them they stared at me in blank astonishment, as though I had addressed them in an unknown tongue. Upon appealing to the master he might ejaculate, 'Oh, but they know the book, sir!' And upon giving them the first word, the poor little things would rattle away until they lost their breath through the rapidity of their utterance. Such treatment as this is a positive cruelty, and managers of schools would do well to see that it is not indulged in. As far as I am concerned, this performance is a profitless one, because I should be robbing the public purse in a most unrighteous manner if I recommended a grant for a subject, I will not remark so unintelligently taught, but so wilfully abused."

As a good specimen of the way in which geography may be sometimes taught, we quote the following from Mr. Markheim:—"At one of the Whitby schools the geographical teaching is a model of intelligence and ingenuity. The subject is the geography of Yorkshire, and a sand map of the county, with all the important physical features, has been carefully modelled on a terrace adjoining the schoolroom. The sand has been brought by the children from the beach, and has been moulded by them, with the assistance of their teachers, into mountains, hills, valleys, and rivers. The proportions are observed with wonderful accuracy; nothing could be neater or more finished in its way than the coast line, ornamented with diminutive lighthouses at the well-known points; the towns are represented by little square blocks of chalk of different sizes, according to their population and importance; the river basins have been carefully distinguished from one another; everything speaks to the eye. It is quite plain that the geography lesson has formed part of the recreation of the school, and the examination is eagerly looked forward to. The children leave the schoolroom and come out into the fresh open air. They cluster round their terrace map, and it is a pleasure to watch the keen interest, the delight with which they answer my questions. I feel that in their case one great object of mental education, viz., the development of a sense of pleasure in the acquisition of knowledge, has been successfully attained."

Contributions and Correspondence.

OBJECTIVE TEACHING.

BY MISS M. K. SMITH, TRACADIE, N. B.

Not long ago I read the heading of a prize essay, "How we grow." It was not my privilege to read more than the title, but that was sufficient to set me thinking of the numberless influences that promote the growth of a human being. Influences all more or less connected with one another, working upon the body, the mind, and the soul. The body increased in size and strength through the agencies of food, air, and exercise; the mind growing by means of impressions borne in upon it through the medium of the senses, —first, the receiving of the image, and the notion in connection therewith, the two forming the idea, and, through the relations of these, the formation of thoughts, and after these, the

power of reflection and the impulses of action; and according to the nature of these reflections and impulses, the growth of the soul is promoted. If impulses be low in their nature, then the soul becomes contracted, low, and sensual; or if they be broad and pure, and right, then the soul grows great and pure, and radiant with a beauty that illuminates the mind, and stamps its impress upon every lineament of the countenance, and makes itself felt in every action of the life, and gives to human nature something of the attribute of Divinity.

"Growth is the Law of all intelligence." Intelligence, or the power to see, comprehend, and reason, is the gift of God, to be developed in us, and by us, till it raises us to a power that shall be God-like in its grandeur; or neglected, misused, or abused till we sink to a level with the brute creation, mere creatures of instinct.

The laws of growth have been conferred by God upon all His creatures, and through the right observance of these laws, by His grace we grow physically, morally and mentally.

In the little seed, there is the germ containing, in minute form, the tree with all its possibilities of trunk, branches, leaves, flowers, and fruit, which, by the favouring conditions of light, warmth, moisture, and fertilizing soil, may be brought to the highest perfection.

In the little child lie concealed all the faculties and abilities calculated to produce the perfect man in the image of God, and the attainment of the end desired depends in a great measure upon the form of development to which the little creature is subjected,—upon the proper observance of Natural Law. I wonder whether we teachers think sufficient of the wonderful work we undertake when we take charge of human beings, who will one day rise as witnesses, whose testimonies for or against us shall affect our interests to all eternity. Whether we ever reflect that the training of human minds, if carelessly done, may be, as *Carlyle has said*, as destructive as blowing human bodies to pieces with gunpowder. Whether we comprehend that the work we have taken in hand is as sacred, I had almost said more sacred, than that of the minister of Christ, whose work it is to try to save souls, which, it may be, we, through our bungling, have helped to place in jeopardy.

If we do realize this awful responsibility, shall we not before entering upon our offices pause to consider whether we are God-appointed teachers, for working with immortal minds, whose success or failure shall be traced back to our skill, or to our incapability; or whether we have appointed ourselves mere hod-carriers in the profession, content if we can but earn money sufficient to keep us in food and clothing, content to walk forever amid difficulties; ourselves blind, and leading the helpless and blind into pits of destruction, which on every hand have been digged by vice and ignorance, and continually yawn for the unwary.

I would that we could realize more thoroughly than we do, that the places we fill are glorious positions, more than worthy of the consecration of our best energies and powers, and that we might every one of us be inspired with a burning ambition to be ever foremost in the ranks of the called, the chosen, and the faithful.

The gardener who is anxious for the perfect development of the seed, is careful to know everything about the conditions necessary to secure proper growth, which must be natural, progressive, and symmetrical.

Now, we who work among human minds ought surely not to do less than inform ourselves of the nature of the work we undertake, in order that we may pursue the methods that may be most likely to insure our success.

In regard to mental development, I found a beautiful thing the other day, from the pen or the tongue, I hardly know which, of *James Hogg*. Speaking of the necessity for easy natural develop-

ment in the place of the hurried, forcing system, which, I am sorry to say, teachers are sometimes obliged to pursue, he says: "Silent and spontaneous growth; like a bit blade o' grass, or a bit flower, or a bit buddie, no the size o' my nail, unfauldin' itsel' to the dew and sunshine into a leaf as braid's my hand,—or a bit birdie, the beginnin' ae week a blin' ba' o' puddock hair, at the beginnin' o' the neist, a mottled and spangled archin, hotchin' restlessly in the neist, and ae three weeks are ower, glint'n' wi' short uncertain, up an' down flichts in an' out among the pear blossoms o' a glorious orchard."

Granting that this silent and spontaneous growth is natural and necessary for the full fruition of the germ, whether it be in the seed that shall later become a tree, or in the human mind that under proper culture shall grow to be a power that shall be felt throughout the universe, we have to consider the means to be employed for the promotion of this silent and spontaneous development, and the methods for nurturing the moral, intellectual, and executive powers which God has placed in our keeping.

Pestalozzi says that all human growth springs from inborn capabilities; and that the promotion of this growth and power may be secured by means of the elements of knowledge which we bring in contact with the young minds, in a way that shall bring into systematic exercise the observing faculties of pupils, with a view to the cultivation of the senses; to the training of the perceptive faculties, to storing the mind with clear ideas, and last, though by no means least, with a view to the cultivation of the power over oral language by leading them to express in appropriate words the ideas thus formed.

In this work we have two things to consider: the nature of the child, which is akin to our own nature, and subject to laws common to the human family; and secondly, the individual nature which separates the pupil from every other. And just here I may remark, that it is in the ignoring or carelessly regarding this individuality that we are in the greatest danger of bungling, and of overruling in our ignorance the process that Nature is carrying on in the human mind. We should look to it that our interference does not tend to the misery, the weakening, or even to the total wrecking of the human life, for whose happiness, virtue, and power the great Mother is slowly and silently working. Our greatest care should be that the process of mental development be based upon natural laws. We know that the all-important rule laid down by Educators is: "Cultivate the faculties in their natural order," and here we may consider the signification of this word *faculty*. *Pestalozzi* has applied it to every manifestation of the human mind, no matter in what direction, or for what purpose.

In the little child, the first sensation appears to be feeling. It can distinguish between heat and cold, not as such perhaps, but as capable of affording pleasurable sensations, or the reverse.

Next appears to come the will-power, or as much of it as is in accordance with the instinct of self-preservation. This seems to be manifested in the vigorous resistance he makes with his only available weapon, the voice, against the wrongs which impose upon him physical pain. If his nerves are shocked by a harsh sound, or if his flesh be scratched by an inadvertent pin, he inflates his lungs, and raising a cry that strikes terror and agony to the hearts of listeners, he, in the most convincing manner, informs you that he has no intention of submitting to the inflicted suffering, and by the pugilistic attitude of his two tiny hands, he warns you of the sincerity of his intentions, had he only power adequate to his will.

Then closely following the will-power comes the desire to know, which appears to be an exercise of the will—some may say, of the mind, or intellect.

Now, before there can be a desire to know, there must be some *thing* or *object* to excite that desire. This some *thing* or *object* must come before the little mind through the medium of the outward senses: first through the eye. Almost the first thing that will attract a little child is the mother's face; principally because it is, during his waking hours, brought before his observation more frequently than any other object. He is never tired gazing upon it. It may be that with this observation, there is on the part of the child a sort of inner consciousness of the great love of the mother-heart. That a knowledge of her intense desire for his well-being appears to be the first impression conveyed in upon his little mind; and in accordance with the instinct of human selfishness, he is drawn to whatever conduces to his physical comfort. He is a philosopher indeed whose mental state is not materially affected by his physical condition.

As the little one grows older, other objects attract his attention. He sees an apple or a ball, and manifests a desire to test it by touch, as well as by sight. By touch he will know whether it is too hot, or too cold, to be comfortable.

Wishing still further to extend his knowledge, he submits the article to the sense of taste, and can very soon distinguish between pleasant and unpleasant in that respect.

Then very soon sounds will affect his ear, and sensations agreeable or the reverse, be conveyed to his mind, causing either his emphatic assurance in a series of screams, that he will have none of it, or manifesting by a laugh that it is his august pleasure to be amused with a repetition of the same.

The faculty which takes cognizance of the knowledge brought to the mind in this way from without, through the sense of sight, hearing, taste, touch and smell, is called perception, and this is called the presentative period, in which the outward perceptions combine to form the observing faculties of the mind.

Next comes the period of representation, when the sensations first imparted can without the aid of the objects first employed be reproduced. This appears to be the first active exercise of memory, and very closely allied to this comes the faculty by means of which the thoughts occasioned by ideas carried into the mind, through the senses, can be rearranged and new products formed, which may, through careful and judicious management, be infinitely extended. This power appears to combine the two faculties of reflection and imagination, while the power which guides them to proper results is called reason.

Thus we have perception, reflection, memory, imagination, and reason, to which the attention of the teacher must be directed in his endeavors to "cultivate the faculties in their natural order," and his efforts must be directed to the training and developing of those powers, instead of filling the mind with abstract truths which makes no impression on the intellect. His instruction, to be educative, must follow the natural laws of intellectual development, which begin in the exercise of the senses, and for this reason, for some time after children enter school, the presentative period must be continued by means of objects placed before the child, and subjected to sight, touch, taste, smell, etc.

Webster defines an object as that which occupies the mind in the act of knowing. From the root *ob* against, and *jacere* to throw, we gather the idea of something thrown or placed against the attention in a way that makes an impression upon the mind or intellect. It may be a material object, such as a ball, book, or stone, in which case it is presented to the mind through the medium of the senses of sight and touch. Anything brought to the mind through the other senses, or through all combined, is no less an object. Then there are what appear to be products of the mind, formed by a re-arrangement of conceived ideas. These may be

called mental objects, or subjective objects, which are gained by means of inward perception or consciousness.

The method of imparting instruction by means of material objects has given rise to the term "Object Lessons," or "Object Teaching," but I think the expression too narrow to convey a correct impression of the proper system of mental development, while I believe that the too close adherence to the *object* has retarded the progress of development in our schools. Probably you have noticed with me that after a few lessons upon objects, the interest in them dies out, or they are dragged through in a way that shows both teacher and pupils to be exceedingly weary of the subject. I have tried to find out the cause of this failure in the attainment of the end proposed, and I think it lies in a want on the part of the teacher in comprehending the full importance of the system. An *object* lesson of half an hour every day, or perhaps of every week, is of little use, and will go but a very little way in developing the mental powers, if the other lessons of the school are carried on in parrot fashion, where definitions, rules, and a limited number of isolated facts are learned by heart, and recited in words of the meaning of which the child has not the remotest conception. I should like to do away with the term "Object Lesson," and in its stead use "Objective Teaching," in which every lesson and every word in it may be brought to the mind in such a way that it becomes a *mental object*. And in the consideration of objective teaching we may consider the place of objects.

From the objects, the child gains the habit of observing and noting peculiarities as regards size, shape, color, weight etc.; and in the consideration of qualities the child learns to compare, and thus gains the very basis of education, which consists in the knowledge of resemblances and differences. Now, in order to make the ideas which the pupil gains through objects of use, he must learn to use these ideas. He must learn to group objects possessing the same peculiarities into classes, and to understand the relation of the individual to the general.

It is argued that the use of objects excites the interest of the pupil. This is true to an extent. If the ideas gained are not made use of, the interest dies out, and he will look upon objects with as much apathy as he will listen to general rules of which he does not understand the first principles. In order to retain the awakened interest, he must be taught to think. He must be led to discover general rules underlying individual cases. While the perceptive faculty is being developed, attention should be given to the representative or reproductive period, and to the creative power, and, during the development of these faculties, wherever possible, material objects may be profitably used to illustrate an idea. The mind must not be allowed to rest content with perception alone, but must be induced to new activities in the creation of new forms and products out of the elements furnished by materials. Perception consists in the consciousness of objects external to the mind, and conception consists in the taking from those objects, into the mind, pictures which may, upon occasion, be reproduced by means of the memory; and just here comes the necessity for language, that the child may have some sign which he can associate with the mental picture. And without this power of association, the development of perception and conception are almost utterly useless. The miser who hoards his gold and denies himself every comfort, is a poorer man and a less useful citizen than the laborer who earns his dollar during the day and spends it at night. The man whose mind is filled with thoughts which he has no power to give to the world—and there are many such—is less useful than the one who has a single idea with appropriate words in which to express it. The necessity is to gain ideas by means of objects, and then to gain words in which to ex-

press those ideas. The words must be as simple as possible, and such as, in their origin and arrangement, are full of signification. I think that in the object lessons which are generally dispensed in our schools, there is a tendency to encumber the sentences with stiff and formal terms; and the lesson is so full of stiff, formal sentences, that the little ones instinctively are led to consider an object lesson a very grave affair. 'Tis true, the idea may be developed, and, in proper form, the term given, but it often happens that the term itself is the most formidable object in the whole lesson, and the little ones use it as they would handle a large nut with a shell so hard that they could not get at the kernel inside. In every object lesson, and, indeed, in every lesson, *teach the children to talk*. I do not intend to convey the impression that it is wise to make children chatterboxes; but our work of development is only half done if we do not enable them to express, in choice words and with nice arrangement, any thoughts to which the objects have given rise.

In this, it may be advisable at times to substitute, in the place of material objects, mental objects which have been abstracted from qualities of materials. It is surprising to see how quickly children will learn to make mental pictures which they will be only too glad to tell to you in their own simple language; and if these are lacking in definiteness and order, it is by the power over words that the pictures are brightened, vivified, harmonized and symmetrized. It may be that this instruction does not come under the head of object lessons, but it certainly comes under the head of objective teaching; and I think any teacher who varies his stiff little lessons upon objects, with *matter* laid down on the right hand and *method* on the left, with language lessons induced by mental pictures, will find the interest and pleasure of his scholars increased, while their development will certainly not be retarded. I shall not say, when you practise object lessons, do not use objects; but I think I may say, when you teach objectively, do not consider an object of a particular size, shape, or color, possessing peculiar qualities, indispensable to your work. An examination of facts, or even of fancies that institute comparisons by which resemblances, differences and relations are observed, is no less objective than an examination of tangible materials.

Perhaps you will bear with me if I again refer to my hobby—the development of language. There are no object lessons more interesting, and at the same time more instructive, than lessons upon words.

Occupations, tastes, habits, indeed the whole history of a nation, may be found in their language, while the intelligent use of words aids the memory, lessens the labor of thinking, and promotes accuracy in reasoning. In a little book I read a few days ago I found this: "The greatest of sciences is that of language; the greatest of human arts is that of using words. No cunning hand of the artificer can contrive a work of mechanism that is for a moment to be compared with those wonderful masterpieces of ingenuity which may be wrought by him who can skilfully mould a beautiful thought that shall preserve, yet radiate, its beauty. A mosaic of words may be made more fair than of inlaid precious stones. The scholar who comes forth from his study a master of the English language, is a workman who has at his command hardly less than a hundred thousand finely-tempered instruments with which he may fashion the most cunning device. This is a trade which all should learn, for it is one that every individual is called to practise. The greatest support of virtue in a community is intelligence; intelligence is the outgrowth of knowledge, and the almoner of all knowledge is language. The possession, therefore, of the resources, and a command over the appliances of language is of the utmost importance to every individual.

"Words are current coins of the realm, and they who do not have them in their treasury, suffer a more pitiable poverty than others who have not a penny of baser specie in their pockets; and the multitude of those who have an unfailing supply, but of the wrong stamp, are possessed only of counterfeit cash that will not pass in circles of respectability."

I should not like to be numbered among those whom Pestalozzi calls worshippers of words; nor would I advocate fluency of speech without thought. We do not pay sufficient attention to the signification of the commonest words in our language, and by our neglect, the thoughts to which we give utterance lose half their beauty.

"Language is a perpetual Orphic son
Which rules with Daedal harmony & throng
Of thoughts and forms which else senseless and shapeless were."

2. We have next to consider the use of books in objective teaching.

Under the old system, not so very many years ago, the school-master, who *was* abroad, and who has gone so far that I am happy to say he is rapidly disappearing from the profession, was known as a man with stooping shoulders, a corrugated brow, a rod in his hand, and a book in his pocket. This book was on occasion brought forth, and its contents drilled into the brains of the pupils, in tones of thunder, to the accompaniments of tears, groans, sighs, sobs, with sundry other manifestations of supreme disgust for, and dissatisfaction with, that teacher, that rod, and that book. In those days the book was about the only article that was considered of much use, if we except the trifling accessories of the master, and the rod, which, according to the strength of muscle possessed by him, more or less strikingly emphasized the principles contained therein. Take away the book, and the teacher was as powerless as Sampson shorn.

Not only was *he* the slave of the book, but the book was the tyrant master of the little world over which he swayed the birch. All day long was the smallest child doomed to sit upon the high benches, without backs, with feet and legs dangling in mid-air, with a book (which did not even possess the merit of being small) held over the little face, shutting out all earthly things, save the great words that conveyed no meaning to the wondering little mind, and which assumed the queerest shapes to the fanciful little gazer.

If occasionally an inquisitive little being was prompted to take a limited view of life round the sides or over the top of the book, no sooner had the curious eyes fixed themselves upon some object that was a perfect feast to the mind, than down came the rod upon the helpless fingers; and the aching and stinging, together with smothered sobs and piteous face, were all buried in the book. That the book was heavy, or that the child was tired, never entered into the consideration of the teacher. His business was to see that the child went *through the book*.

It sometimes happened that a child became interested in the book, and had a real desire to know what connection the words had with himself or any other object in life (this book was chiefly made up of isolated words, ranging from one to an incredible number of syllables), and would summon courage sufficient to consult the master as to what a word meant, when he was made to realize the rashness and absurdity of his questioning by the teacher, in a tone of severe reproach and rebuke, answering: "Tut! What do you want to know that for? Go to your seat and study your lesson!" And to his seat the daring explorer into word-mysteries returned with a crestfallen attitude, his humiliation mingled with a vague thankfulness that he had not been totally annihilated.

At night, the unfortunate student was doomed to carry the book home, and there existence was rendered a state of misery by the heartrending struggles, in which all the family joined, to store

away in the weary little brain, a sufficiency of the book to secure the unfortunate fingers from contact with the birch on the morrow.

It is true the trials of the book were not without their alleviations, for when pencils could be procured, the margins of the leaves served for spaces whereon were to be seen marvellous attempts in designing, most of them bearing a rather curious resemblance to the teacher in his worst aspect, while behind those ample covers, many a grimace, expressive of great disgust with the whole system, was perpetrated; and to the dog's-eared leaves, many a discontented murmur was confined. As Objective Teaching has come in, the book has, to a certain extent, gone out, though I am sorry to say that even yet the majority of children in the common schools, and I believe I may say the students in the higher departments, are weighed down with burdens too grievous to be borne, in consequence of a blind faith in the contents of books. We see girls and boys, day after day, carrying home loads of books that, I believe, go far towards enfeebling the intellect and creating such a dislike for research, that, as soon as the victims escape from the school-rooms, they resist every inducement to open a book that looks as if it might contain a geographical fact or a historical date. It is true that some tremendous feats are on record in connection with the study of books. I know one lady who studied and committed to memory a large Dictionary—Webster's, I think; another could recite the whole of Mangnall's Questions; while such books as "The Reason Why," and many others, were taken, in unlimited quantities, into the memory. It may be that teachers and pupils worked as well as they knew, but it was, I think, terrible cruelty to the student at least.

There can be nothing more dreary than to see children, after a fatiguing day in school, working all evening over lessons that will not be committed to memory, going to bed with a sense of unfinished tasks upon their minds, some of them putting the hardest books under their pillows, having somewhere imbibed the superstition that the contents will by this means enter into their brain, by becoming blended with their dreams. Then to see them waked in the morning by an anxious mother with, "Come Mary, you know you have your lessons to prepare," and then the sullen, listless way in which those lessons are conned, and the unwillingness with which books are gathered, and the way taken to school; and then the envy and hatred that are engendered in the human heart, as some pupil, gifted after the manner of a parrot, gets up and glibly rattles off the very dates, events and definitions, that would not be induced to stay with poor Mary; and to hear the *parrot* pupil called "clever and promising," while the other gets admonitions to "beware of bringing a father's or a mother's gray hairs in sorrow to the grave;" or to "take care of the road to ruin," with many other warnings, and all because she could not remember a set form of words, that conveyed no meaning to her understanding.

I do wish something could be done to do away with so many home lessons, particularly among young children. I know that many teachers urge in excuse that the parents will not be satisfied as to the progress of their children, unless they see them toiling over home tasks; but we are glad to know that the day for pandering to the prejudices of a few people who do not understand the principles of our work has gone by, and, under our grand Free School system, teachers are so upheld and supported by their trustees, and, if not by them, by the Board of Education, that they need not fear to put in practice any right principle.

Besides the drudgery of rote-work, I believe that memorized lessons, especially in the early stages of development, materially hinder progress.

I have no doubt that many here can remember the long and weary journey through the multiplication table; a journey that was truly

a way of sorrows, every step of which was made with suffering of no light nature.

Now, by a few object lessons upon the ball-frame, we lead pupils to discover the Mystery of Mysteries, and in a week they are able to construct the tables, equal in every respect to the wonderful arrangement that formerly demanded months of study to master, and years of application to understand. The first lessons upon any subject must be presented through the senses. "Children will do better in examining things than in reading about them."

I am inclined, however, to call in question rather the abuse than the use of books; for that they have important use there can be no doubt.

As references, or as supplying facts that are not easily accessible to investigation, they are valuable. Text-books, well-arranged, aid the teacher; enabling him to save time by supplying statements or by supplementing experience.

After the elements of any branch of study have been learned, books upon the subject may, with profit, be consulted, provided the pupils are capable of an intelligent appreciation of the information they gather.

When used aright, books are indeed wondrous in their power for good, but when blindly used, they are, to the human mind, instruments of evil, enfeebling the Memory, hindering Observation, Thought, Imagination, Judgment and Reason, and, indeed, every mental faculty, while implanting a false persuasion of knowledge without the reality. Plato has said, "The written word is but a mere phantom or ghost of the spoken word; which latter is the only legitimate offspring of the teacher, springing fresh and living out of his mind, and engraving itself profoundly upon the mind of the hearer."

In Objective Teaching, books are not tyrants, but, subjected to intelligent criticism, reason and judgment, they become valuable servitors to both teacher and students.

8. The Place of the Teacher in Objective Teaching.

To give an idea of the *Place* of the Teacher under the system that was not Objective, but Subjective, I quote from Walter Scott: "But there is one individual who partakes of the relief afforded by the moment of dismissal, whose feelings are not so obvious to the eye of the spectator, or so apt to receive his sympathy. I mean the teacher himself, who, stunned with the hum and suffocated by the closeness of his schoolroom, has spent the whole day—himself against a host—in controlling petulance, exciting indifference to action, striving to enlighten stupidity, and laboring to soften obstinacy; and whose very powers of intellect have been confounded by hearing the same dull lessons repeated a hundred times by rote, and only varied by the various blunders of the reciters. Even the flowers of classic genius, with which his solitary fancy is most gratified, have been rendered degraded in his imagination by their connection with tears, with errors, and with puniments; so that the Eclogues of Virgil and the Odes of Horace are each inseparably allied in association with the sullen figure and monotonous recitation of some blubbing school-boy. If to these mental distresses are added a delicate frame of body, and a mind ambitious of some higher distinction than that of being the tyrant of childhood, the reader may have some slight conception of the relief a solitary walk, in the cool of a fine summer evening, affords to the head which has ached, and the nerves which have been shattered, for so many hours, in plying the irksome task of public instruction." That is an ugly picture. Time was when it contained more truth than it does to-day, though even yet there are touches that arouse our sympathy."

I wish, however, that Scott had, before he died, secured a broader view of this glorious work in which we are engaged; a work surpassing far that of the sculptor of marble, the cunning artificer in

brass, the skilful painter upon canvas, or the architect of magnificent temples; for all that they do must yield to time. The statue will perish, the inscriptions time will efface, the brightest colors will fade, and the grandest structures will crumble to dust; while in developing in human minds right principles of action, in imbuing them with the fear of God and the love of our fellow-men, "We are engraving, upon immortal tablets, records that shall brighten to all eternity."

The teacher who can only attain the distinction of being the tyrant of childhood, had better abandon his elevated position as quickly as possible, and seek for happiness in some more retired walk in life, where the peculiar qualities of his nature may develop without injury to his fellow-creatures. But what man or woman can conceive an ambition higher than that of controlling human minds, of generating ideas and fostering their growth till the results shall be a harvest of intellect that shall, in the ages to come, be a mighty power that shall advance and elevate humanity, and redound to the glory of God?

The position of the schoolmaster, as well as his profession, has, in every country, received at least sufficient contempt to keep him in a proper state of humility.

Josh Billings speaks of him "as a man going from house to house, taking his codfish balls reverently, and submitting patiently to any indignities that may occur to an ignorant people;" while Carlyle mentions one as "a down-trodden, broken-hearted, under-foot martyr, as others of that guild are." But we are glad to know that the time for all this has passed, and it now depends upon the teacher himself to enforce respect for his position and his profession. "Only fit for a teacher," is an expression that has been used, implying "fit for nothing under the sun."

I wonder how many have ever thought of the full significance of the word Teacher; and I wonder if ever there was a human being fit for a teacher. Since the lessons by the Sea of Galilee; since the Sermon on the Mount, I wonder how much real teaching has been done upon this earth of ours? The dross of Ignorance, of Neglect, and of Unbelief have mingled with the few sparkling grains of Truth that have been scattered abroad, until the fine gold has become so dim that we cannot wonder at its being mistaken for base metal.

That there have been grounds for the stigma which long ago attached to the profession, we are obliged to admit. But it is our privilege to see that there shall be, in the future, no grounds for a continuance of the same, while we shall, if possible, do utterly away with the existing disfavor.

In order to attain this end, we must spare no pains to fit ourselves for our places, and we must discharge, faithfully and well, the duties of our position; never for a moment losing sight of the responsibilities to which we have been called. I know full well the numberless hindrances that render the Teacher's path a way of difficulties, and I think have experienced a full share of the vexing cares that only a Teacher can know; yet I do believe that, instead of being obstacles to progress, these very annoyances may be transmuted into aids that shall prove of essential service in our advancement.

In Objective Teaching, the teacher's place is not behind the book, but between the child and the book. The master who could stand the same dull lesson repeated a hundred times by rote, must have had wondrous powers of endurance, such as are not known in these days. I think the aching head and all the other evils so touchingly described, were the results of his own unfitness for the position he held. The Teacher must so develop the judgment and reasoning power that his students may be able to attach a true value to the principles laid down in books. He must

lead the child to observe, and to reflect upon what he observes; and, instead of giving him what Professor Blackie calls the "mere echo of knowledge," he must foster the growth of true knowledge which has its root in the thinking soul; and as he develops the mental faculties, he must train the child to such exercise of those faculties as shall strengthen and promote their growth.

Instead of displaying before his pupils the remains of learning, much as one might exhibit the relics of dead saints, he must, by means of learning, enable the young mind to work—*miracles*; to originate; to produce new forms that shall equal, and if possible surpass, any previous production. It is thus that the growth of an individual or a nation is fostered, and it is in large measure upon the Teacher that the future prosperity of individuals and of nations depends. He must be an *Educator* who has the highest interests of his profession so deeply at heart that no trouble is too great, provided he can the better fit himself for his work.

In this, as in everything else, the Teacher must practise his own precepts. If he will have children to originate, he must show himself something of a creator. If he will have them act, he must show himself ready in action. If he will have them think and feel earnestly, he must show himself capable of earnest thought and feeling.

He must have an active mind, brilliant with living thoughts and glowing with an ardent zeal for the advancement and the elevation of humanity. He must look upon his work as worthy the cultivation of the highest possibilities of his nature, and of the exercise of his finest capabilities. He must throw private preferences and prejudices to the winds, and work earnestly; his highest ambition being the promotion of intelligence among his fellow-creatures.

4. Lastly we have to consider the end attained by a system of Objective Teaching.

After a course of cultivation in accordance with certain conditions established by nature, the gardener finds the little seed which he planted in the ground become a great tree, fulfilling its promise of stately trunk, symmetrical branches, rich and abundant foliage, fragrant blossoms and luscious fruit.

The mind of the child is the field in which the seed of future promise lies concealed, and if the Educator has, in accordance with fixed and immutable laws, prepared for the development and nutrition of the plant, wondrous will be the results. The eyes that have been trained to see shall, in time to come, behold all beauty and wisdom in the great Book of Nature. To their searching gaze, the wonders of the stars of heaven shall be revealed, while the mysteries of the mighty deeps shall be unfolded to their view. The ear that has been taught to listen shall be able to divide the sounds of nature and of the human voice into harmonies that shall minister delight to the soul. The hand that has been trained to touch and to fashion, shall yet shape wonderful things; shall build mighty structures; shall guide the pencil in producing marvels of genius in pictures; shall shape the marble to the most graceful proportions; shall pen wisdom that shall be for the guidance of coming ages; shall draw forth from instruments which their own skill has fashioned, sounds rivalling in sweetness the songs of angels; while the tongues that have been taught to speak, shall give forth from the storehouse of the soul thoughts that shall draw all men to listen, breathless with wonder and reverence. By them the destinies of empires shall be changed; the words of eternal life, carrying conviction in upon every mind, shall be borne to the ends of the earth. They shall utter songs of marvellous sweetness and power that shall echo down the ages, filling human minds with all good and grand impulses; and, in the humble quiet of private life, they shall convey delight to hearts that beat with

happy emotions at the loved familiar tones ; or they shall convey to the Throne of Grace the praise and thanksgiving of humble, worshipping souls.

Pestalozzi has symbolized the undeveloped human mind by a " seed planted near fertilizing waters." Shall we image the fully-developed human mind by a perfect tree, watered by the River of Life, growing by the Throne of God—the Immortal Amaranth hung with the blossoms and fruitage of a noble character ?

PHYSICAL EDUCATION AND ITS PRACTICAL INTRODUCTION INTO SCHOOLS.

A PAPER READ BEFORE THE TEACHERS' ASSOCIATION OF ENGLAND, BY DR. ROTH, JAN. 15, 1880.

As the subject on which I have to address you is a very large one, and the time allotted to me very short, I can only give you a bird's-eye view of this important and much-neglected branch of education.

People having but a superficial knowledge of a thorough education still believe that they can separate mind from body, and that they can develop our physical faculties without our intellectual ones ; they forget that the mind and soul have a physical basis, and that there is but one education.

No man can have his mind well trained without a good physique ; no intellectual education can take place without a previous physical education of the senses, and moral training can only follow the intellectual, based on the physical.

Education is the harmonious development of all bodily, mental, and moral faculties, for the purpose of contributing to our own and our fellow-creatures' happiness, and of enabling the next generation still more to improve their successors. Education should be progressive ; the future generation should be more improved, and brought nearer to the possible perfection of our natures. The development of our bodily faculties on scientific principles through the intellect is called scientific physical education, and this is the science which considers man an inseparable unity, and does not admit partial development of the body or of its single parts, without a simultaneous harmonious development of the mind.

In order to develop our physical faculties to the highest standard, the body is to be placed in the most favorable circumstances affecting its growth and development ; all the influences which in any way retard or interfere with its natural development must be removed—the science which teaches us what is useful and injurious to the body is called hygiene, or science of health. We call school hygiene that part of this science which relates to the growing human body during the time of school, college, or university education ; in this case all arrangements connected with the school-building—the school-room, its ventilation, lighting, and warming, the construction of windows, doors, benches, forms, seats, and all the necessary accessories—must be in accordance with sanitary rules. Another part of school hygiene concerns the teacher, who, before his admission as public teacher, should be carefully examined whether his intellect and physique have a predisposition to any disease, or to break down under the burden of his future heavy duties. One of the most important qualities of a teacher is to be healthy, strong, and to know how to preserve his own health—otherwise, he is unable to preserve the health of his pupils. Every teacher should, therefore, learn in the training college the elements of personal and school hygiene ; he should know the injurious effects of bad air, light, food and drink, tight clothing, bad boots, the neglect of cleanliness, bad positions during the various occupations of the pupils, and of the danger of infectious diseases being brought to and communicated in schools—in fact, the teacher must

know how to avoid whatever interferes with his own and his pupils' health.

School hygiene refers also to the pupils, who should be daily examined as to the cleanliness and tidiness of the head, face, hands, body, dress, and shoes, and further as to any symptom of ringworm, inflammation of the eyes, sore throat, cough, fever, &c. The ignorance of hygiene prevails not only among the poor and working classes, but also in the middle and higher classes. A short time ago I had a letter from an intelligent governess knowing the value of health, in which she mentions how all her endeavors for teaching her pupils the bad effects of tight lacing, and intemperance in eating and drinking, &c., are all neutralized by the parents' ignorance of hygiene, which depends upon careful attention to apparently small things, and which should be taught in schools. As long as medical inspectors are not appointed, as in Paris, Boston, and other places, it is still more important for the teacher to take the place of the inspector.

While preparing my notes for this address I had a letter from Dr. Janssen, the Chief Inspector of the Sanitary Service in the city of Brussels, in which he gives an account of the medical inspection of all infant, primary, secondary and higher schools, which are visited once a week. He speaks of the popular courses on health given to the boys' and girls' schools by the medical inspectors, and of the preventive treatment of very weak children, and of such as are predisposed to constitutional diseases, so frequent in large towns. The doctor also mentions that the hygiene and care of the pupils' teeth is not neglected ; a special dentist is employed for this purpose. At the beginning of the school year every pupil is medically examined, and if weak, or constitutionally ill, placed under treatment. At the end of the year the result of the treatment is registered in the presence of the teacher and a second medical man. I am sorry not to have time to enter into the details of the Brussels sanitary school-work due to Dr. Janssen's energy.

In London, the richest city in the world, nobody thinks of the necessity of a medical inspector of schools ; but instead of preventing children from being ill, we are constantly begging and collecting money for children's hospitals and orthopædic institutions. Hygiene is an essential and indispensable part of scientific physical education. The school must be made use of, for imparting the knowledge of popular and practical hygiene. By choosing the human body and its single parts, as well as the functions of the body, as object-lessons, illustrated by suitable diagrams, an intelligent teacher will make the subject of health very interesting, even to children. With few exceptions, the practical hygienic part of physical education has made very little progress, and everywhere, even on the continent, much is still to be desired in this respect.

To prove how much the hygienic ignorance of the public costs, just look at the columns of advertisements of patent medicines, pills, ointments, lentil meal (under the name of "Revalenta Arabica"), etc., which cure and prevent all diseases ; the ignorant public pays hundreds of thousands for the advertisements, and still more for the advertised drugs. There is no doubt that the daily and periodical press, with the influential power it possesses, contributes through these advertisements to the preservation of prejudice and ignorance among all classes, and especially among those unacquainted with the practical knowledge of preserving health. As long as the leading journals consent to admit the advertisements of quack and patent medicines, magnetic and other contrivances, and of liver or stomach pads, the wonderful curative powers of which are certified so many thousand times in the daily and weekly papers, there is only one remedy for counteracting the injurious and expensive effects of such advertisements—namely, to teach children in school what is good and what is bad for their body and health. I have no time to enter

fully into this part of physical education, and wish to mention that there is in the Kensington Museum a collection of means for scientific physical education, which I have exhibited in the International Exhibition of 1862. The task of hygiene is to give us the best raw material, otherwise we cannot manufacture a good article.

Dr. Roth explained a few diagrams of foot deformities, of bad positions; and a model of a hygienic chair and desk.

The second part required for the purpose of developing harmoniously the physical faculties consists in the practical use of a scientific system of exercises, based on anatomical and physiological principles, and adapted to the various ages.

Greek Gymnastics.—The science and art of bodily exercises was developed to its highest standard by the Greeks under the name of gymnastics. According to Lucian, Solon said to the Scythian, Anacharsis, "To us Greeks it is not enough to have a man as nature created him, but we train him by gymnastics that we may make that much better which nature has done well, and improve what is inferior."

Gymnastics was interwoven with Greek national life; it formed an essential and very important branch of the education of both sexes; health and beauty, which were considered essential accomplishments, were due to a great extent to scientific gymnastics. The highest developments of the beautiful human form, which served the Greek painters and sculptors as models for those wonderful pieces of art which still engross our admiration as well as the sense of the beautiful (the so-called æsthetic sense, which spread all over Greece), were owing to the same science. When agonistics (the art of wrestling, fighting, struggling, &c.), and, later, athletics (by which only brute force was developed) had a more prominent place in Greece, gymnastics went out of use and decayed.

Unsuitable Gymnastics.—That the Greeks spoke with much contempt of gymnastics when it began to degenerate, with regard to good manners, is shown by the following.—Kleisthenes, who lived about 500 B.C., may be looked upon as a type of the real Greek spirit prevailing at that time, which turned with antipathy from whatsoever was unæsthetic, gymnastics included, his daughter, Agarista, was courted by Hippocleides, a rich young Greek, who, by his engaging manners, had already obtained the father's good will, which he entirely lost by a single action. During courtship, and at other domestic festivals, it was the custom to amuse the visitors by gymnastic exercises. Hippocleides, well acquainted with all bodily exercise, performed miraculous feats, believing thereby to rise still more in the estimation of his future father-in-law, who with much difficulty restrained himself from expressing his disapprobation of the frivolous attitudes and exercises; but when the young man even stood on his head, and in this position commenced to gesticulate with his legs as if they were arms, Kleisthenes could no longer stand it, and called out with indignation, "O! son of Tisanodos, you have danced away your marriage," and the daughter was refused to her lover.

What a contrast between the indignation of Kleisthenes and the loud calls of applause which are bestowed on the same unæsthetic and similar feats performed in our theatres and so-called gymnasia! What would the well-educated old Greek say were he to see in our gymnastic institutions how the young men, hanging with their knees on a horizontal bar, swing round and round like a mill-wheel?

Since the fall of Greece no scientific system of gymnastics has been known till the eminent Swede Ling, who ranks amongst his compatriots as high as Linnaeus and Berzelius, invented in 1805 what is called rational gymnastics, a system based on anatomy and physiology. Ling, an eminent poet and patriot, wished to increase Sweden's power of resistance against further encroachments of Russia, which had already taken too many provinces from Sweden;

he believed the best to be done for this patriotic purpose would be the scientific physical development of every Swede.

Rational gymnastics is divided into four parts—the Educational or Pedagogical, the Military, the Æsthetic, and Medical.

Æsthetic Gymnastics.—Educational, rational gymnastics is the basis of this science, which teaches us to express by the body, through different positions and movements, a thought or a feeling. It is especially in this part of gymnastics that oneness of body and soul is aimed at. Each single movement following an idea conceived by the mind is a thought expressed by the body. When it is possible to express an idea by the body, the whole organism becomes an organ of the thought; consequently, this organ must in every part express this thought, otherwise the expression is not faithful or not clear. A person desirous of expressing tenderness while clenching his fist, expresses by his body something quite different from the idea intended. In æsthetic gymnastics it is the soul which acts on the body, while in educational gymnastics it is the body which acts on the soul. Thus, æsthetic gymnastics becomes a means of developing and perfecting sculpture, painting and the other fine arts. As in declamation and song, so in each gesture there is a definite rhythm; and the artist who wishes to represent a certain idea must choose a certain moment of action if he wishes to convey his idea through the creation of his art.

All our passions are divided into two classes, those of sympathy and antipathy, or affection and aversion. The first are expressed by oval, the second by angular lines; even the various degrees of intensity of the same idea are expressed by various positions and movements.

Military Gymnastics is also based on the educational branch, and is the science which teaches how to subdue, by the assistance of external means (as weapons), or by our own bodily force, another will external to our own. Fencing, sword and lance exercises, bayonet fencing and wrestling are, besides the educational branch, the principal exercises of military gymnastics.

Medical Gymnastics is the science which teaches "to allay or cure pains and disorders by certain positions and movements, done either by ourselves alone, or with the assistance of others, acting upon us, whereby the harmony in the different parts of the body, which has previously been deranged, is restored." A number of patients who suffered from chronic complaints and deformities, owe to the genius of Ling relief and cure. Although medical gymnastics has always been used by the Chinese, and later by the ancients, the special movements and manifold manipulations invented by Ling were not known before. I believe it more suitable to say a few words on the various branches of Ling's rational gymnastics, before I enter more fully on the aims and final result of pedagogic gymnastics.

The aim and final results of pedagogic gymnastics is to develop man to such a degree of perfection as is shown by very good health, complete energy and harmony in all his powers and faculties, the ease of movement of the limbs, and by the symmetry of his bodily form. Having obtained such a development, the organism is ready and capable of obeying the commands of the will, and of serving the soul as an useful and enduring instrument. For the purpose of obtaining this result, it is not enough to find out by numerous combinations and variations of certain sets of exercises all that is possible to be done, but we must study and inquire into the laws according to which the exercises answer the object and the results we are aiming at. These laws are based on the exact knowledge of the nature of the human body; therefore the knowledge of the bones and muscles forms an indispensable basis. As the muscles are influenced by the nerves, and as the various organs of the living body act and react on each other, physiology is necessarily an additional science required for the practice of rational gymnastics.

tics. As physiology culminates in psychology—the science of the intimate connection and mutual influence of body and mind—a knowledge of this science is also desirable. In proportion with the greater development of the organs, man acquires greater liberty and independence in his moral will and actions, as well as greater energy and power of endurance. The teacher of physical education should be able to study the mind of his pupils and judge to what extent and how best to adapt certain gymnastic exercises to their various mental and bodily constitutions. He must be an educator, a pedagogue, and have the æsthetic sense well developed.

The whole bearing of a physically well-educated human being must appear free, noble, pleasing to the eye, and satisfy the æsthetic sense; the teacher must insist on bad, ugly movements being left off, while he should rouse the sense for beautiful forms of movement. I have already mentioned why the teacher must know the elements of hygiene, he will, therefore, know that all his pupils, even those of the same class, cannot be treated in one and the same way. A plethoric pupil, one disposed to giddiness, or one with a weak but not diseased chest, is not to be excluded from the exercise class—on the contrary, many of these and similar indispositions can be removed by suitable gymnastic instruction; it is on this account that all the students in the Royal Central Gymnastic Institution of Stockholm are instructed in the diagnosis of certain complaints and irregularities of form and gymnastic curative movements, to enable them to treat their future pupils according to their constitutions.

Having mentioned the qualifications and knowledge required by a teacher of scientific physical education, you will easily understand that the drill-sergeant, calisthenic and gymnastic teacher, and dancing mistress, &c., to whom alone the physical education of our children and youth in the United Kingdom is at present confided, are decidedly not the right persons in the right places.

The reason why these people are resorted to is that even at present the majority of head masters of public and private schools, School Boards, committees of large training colleges, students and teachers, medical and military men, are all unacquainted with the present state of scientific physical education and rational gymnastics. The few who think of physical education separate mind from body, and believe that desk, school, and military drill, climbing ropes and ladders, swinging the body round and round a horizontal bar, and other exercises developing force, are sufficient. Rothstein, the author of the most philosophic and best exposition of Ling's system of gymnastics (published in 1848), says: "It is very singular that we should not confide the care and training of a valuable horse to a man who has not a knowledge of the animal's body and of the functions of the organs, while the man who is entrusted with the development of the human body is not expected to possess any knowledge whatever of such a science."

The unacquaintance of teachers with the subject I am advocating is not a libel, but a serious fact. I hope that the head master of a well-known public school in London, who intends establishing a gymnasium, to which he generously contributes a fourth of the expenses, will be careful that the instruction be more scientific than in the so-called military, model, and other gymnasiums, where are used all kinds of unæsthetic exercises, which only develop brute force, and which would not have been approved of by our old friend Kleisthenes.

As the present Vice-President of the Committee of Privy Council on Education has lately proved his interest in the better instruction in singing, which is merely a part of physical education, it is reasonably to be expected that he will take still more interest in improving the present bad and deficient state of physical education and hygiene, which, if not more important, is at any rate as

important as singing; a statement the truth of which cannot be denied by anybody.

I suggest that—

1. These branches of education should be *compulsory*.
2. The teachers should be paid for the extra work in the same proportion as for reading, writing and arithmetic.
3. The pupil teachers, schoolmasters and mistresses, should be trained in training schools in the elements of sanitary knowledge and physical education, in which they should not only pass a theoretical examination, but prove their proficiency for teaching these branches practically.
4. Teachers who are already practically employed should have an opportunity, during a limited time (say, during the holidays), to go through a supplementary course of instruction, to enable them to teach their pupils at least the rudiments of the knowledge.
5. For some time *unattached* teachers of physical education should go to the various school districts, to give theoretical and practical instruction to such teachers as are unable to leave their schools even for a limited period.
6. In all schools a minimum of sanitary knowledge and physical education should form the standard according to which the teachers should be paid.
7. *Elementary* books on sanitary knowledge and physical education, approved by the Council of Education, to be used.
8. A National Central Institution for Physical Education and Hygiene should be established, on the model of that institution in Sweden which was established in 1813, and is probably the best—or of that in Berlin.

Only *certificated* schoolmasters and mistresses should be admitted, who should go through a special course of instruction in the elements of anatomy, physiology, hygiene (in their relation to physical education), and theory and practice of bodily exercises; after passing an examination they would obtain a certificate as special teachers of physical education and hygiene. Officers of the army and navy might be also admitted to these courses, as in Sweden and Prussia.

These special teachers of physical education could be employed as *unattached* teachers to give the supplementary course named (suggestions 4 and 5); while the military and naval officers could, when certified, begin similar courses in naval and military schools, in their regiments and ships.

9. From my personal experience of the few voluntary courses I have given to intelligent schoolmistresses, fifty lessons of one hour and a half, given by certified and *unattached* teachers, would be sufficient for the supplementary course in the *elements* of physical education and hygiene.

10. During the holidays, teachers from the country could be invited to come to the large towns and to attend these supplementary courses.

11. The expenses of these country teachers should be paid to those teachers who pass their examination.

12. After having passed their examination, the teachers should be obliged to make physical education an integral part of the course of instruction, for which they are to be paid in proportion to the time spent on it, or according to the results of examination in the various standards of physical education and hygiene, which, like the other subjects of instruction, will be required.

13. According to my humble opinion, the future schoolmistresses in all Training Colleges should also be practically instructed in the management of babies and infants; for which purpose a model nursery, for six to twelve orphan babies and infants, should be attached to each college, under the superintendence of an educated and well-trained nurse; every pupil teacher could thus learn how to feed, dress, wash and manage a baby in order to keep it well

and strong. The general ignorance of mothers in all classes of society, of nurses, of nursery governesses, regarding the first physical education of a baby and infant, is the cause of the infant mortality, to which no doubt *neglect* contributes very much.

14. The importance of swimming for all school children of both sexes is not yet sufficiently appreciated. All School Boards of large towns should take the matter of swimming baths in hand as a part of physical education. The ratepayers would soon find out that every penny well employed by a School Board saves two-pence in poor and police rates, and in the expense for medical attendance and chemists' bills.

15. My last suggestion is the appointment of Medical Inspectors of Schools, to prevent the large class of school diseases, which are partly imported and spread by infection, partly caused by unsuitable school arrangements.

The practical exercises of pedagogic gymnastics do not develop special manual and bodily ease and skill required, later in life, for a special trade or profession, but deal with those faculties and powers which are necessary to every one, and which are required by everybody in the various circumstances of life; thus, besides the general development of the body, walking, running, high and long jumping, climbing, hanging, and swimming are objects of special attention. Although the natural power enables a man to do the exercises just named, without any special school instruction, pedagogic gymnastics teaches how they are done with the greatest ease, safety, energy, and with a quick resolution at the right time; and, further, how they are to be done for the ultimate aim of gymnastics.

It is obvious that no single one of these exercises should be practised at the expense of the others; the aim is not to try to obtain the maximum to which exercise can be carried, but that the exercises in general should be reasonably limited; unæsthetic, unnatural, artificial, and acrobatic exercises, are neither wanted nor permitted. The aim is not to do all possible exercises, but only those which can be done rationally. For educational purposes, simple gymnastics are the best. The pedagogical, practical, and æsthetical aim is to be considered in each exercise; too many exercises, as well as too great a variety, are not required. One part of Ling's rational pedagogic gymnastics consist of exercises which are done without any external, mechanical, or gymnastic apparatus; they are, therefore, called free exercises. They appear more simple than they really are. Each gymnastic exercise is based on the special structure of the joint on which it acts; has commencing, many intermediate, and final positions; it is done in a definite period of time, and in a definite direction. Just as there are various standards of writing, reading, and arithmetic, so there are various standards of exercises to be chosen on pedagogic principles, and adapted to the various ages and stages of strength of the pupils.

The so-called simple free exercises can be combined in a manner similar to the letters of the alphabet; and two, three or more simple free exercises can be chosen. One individual or many persons can perform the free exercise at the same time, which is done by words of command. If the physical faculties are developed to a certain extent, and if it is desired to make further progress, two or three persons form a group for the purpose of mutually assisting or resisting one another. The models and drawings I have here represent a few positions and movements of the free exercises. Having taken much interest in the improvement of the physique of the blind, I had an artist for several months living with me to model from life about thirty-six positions; a copy of the original models I have given to the Kensington Museum, where they form part of a collection which I have named before. These models are

bad imitations of the original bas-relief of which you have the drawings in your hand; they serve for the instruction of the blind, deaf or dumb, and also for children in general. The Society for the Improvement of the Blind have been so kind as to lend me these models for the present occasion.

As there are probably some persons present who have never heard of free exercises, I intend showing you some models and drawings representing the elementary free exercises, which can be arranged under the heads of bending, stretching, turning, and circular movements. The movements of the head are analogous to those of the trunk, while those of the arms and hands are similar to those of the legs and feet. According to the commencing position of the body, which can be standing, sitting, kneeling, lying, the effects of the various exercises change; for school purposes the standing position is usually chosen. This standing position varies according to the position in which the feet are placed. There are two fundamental positions of the feet, called "feet open" and "feet close," which can be varied according to the distance in which one foot is placed, either sideways, forward, or backwards. The length of the pupil's foot represents the distance, which can be single, double, or threefold, sometimes even fourfold. If the base on which the pupil stands is diminished, more attention and effort are required, because the exercise to be done is more difficult. If the same exercise is to be done on one leg only, it is necessarily still more difficult. If exercises of various parts of the body are combined and simultaneously executed, the difficulties increase according to the various combinations. I have mentioned these few instances only for the purpose of showing that the teacher has in the free exercises all the means for gradually developing the physical faculties of his pupils. My advocacy of the free exercises is based on the many advantages which they offer in physical, mental, and moral respects. I shall only say a few words on the advantages of free exercises, but must refer you to my little pamphlet on the neglect of Physical Education and Hygiene by Parliament and the Education Department, where both the advantages as well as the consequences of neglect of physical education are more fully named. Many teachers know the improvement in discipline, obedience, and order, caused even by the unscientific ordinary drill.

In a paper on Physical and Mental Training (which Mr. Chadwick was kind enough to send me), he mentions "a committee of a large school considered physical training unnecessary, and the drill-master was dismissed." The immediate result was bodily irritability, and hence uncontrollable mental irritability on the part of the boys. There was tumult and bolstering in the dormitories, and all sorts of riot and disorder ensued. In less than a fortnight damage was done to the amount of £200, more than three years' salary of the drill-master. The chaplain exhorted and prayed, the master flogged, and flogged, and flogged, but without effect, as flogging did not touch the seat of depravity—irritation from the want of physical exercise. At last the chaplain and manager besought the restoration of the teacher and the physical exercise he directed. This was done. The demands of hygiene were satisfied; there was quiet sleep in the dormitories, and so it has gone on. Now, wheresoever we hear of any disorder and rebellion in schools, wheresoever there has been extensive truancy, we may be sure that it is the system or the managers that are in the wrong.

The importance of these exercises for military training is well known to the Imperial German Government, the Emperor being the Commander-in-Chief of all German armies, and there is what they call "ein allerhöchster Befehl," or Cabinet order—which means that the Emperor himself has signed the order that all German recruits must pass through an obligatory course in these ex-

ercises, which are considered the best preparatory ones for their military duties. While an English recruit wants two years to be an efficient soldier, the German recruit is in fourteen or fifteen weeks sufficiently trained for the company drill; as the company is the unit of the battalion and of the regiment, we may say that he is an efficient soldier. Please to think of the saving in money and time which can be obtained by scientific training.

Will you not be surprised to hear that even the German cavalry recruit is obliged to learn the free exercises while on horseback, without stirrup and reins? According to a General Order of the 6th July, 1871, the Prussians state that their scientific physical training is one of the most important factors in gaining their victories in the wars against Austria and France. "The extraordinary qualities of which our armies have given proof in the last war, their indefatigable vigour in marching, the ease and agility with which, in a hostile country, they have overcome all natural and other impediments, their courage and presence of mind, their endurance in supporting privation and suffering, must be ascribed, in a great measure to the gymnastic instruction of the soldiers first in the schools, and later in their respective regiments."

Hitherto our Government has not thought it worth their while to consider the subject, although the humble author of this address, called their attention to it twenty-six years ago, in a public letter "On the importance of Rational Gymnastics as a Branch of National Education," addressed to the Lord President of the Committee of Council on Education; and a second time in 1870, in a pamphlet entitled "A Plea for the Compulsory Teaching of the Elements of Physical Education."

When foreign countries improve the quality and increase the thickness of the steel plates for covering their men-of-war, when they increase the size of their projectiles, or prepare a 100-ton gun, our Government is alive to the necessity of having the same or still more powerful weapons, and do not hesitate to pay half-a-million of pounds for a man-of-war, or £16,500 sterling for each 100-ton gun. But when it is the question of improving the physique of the real defenders of the country, years pass before they even inquire into the best means of obtaining this object, and the unavoidable effect of the neglect of popular practical hygiene, and of scientific physical education, is the progressive degeneration of the physique of the population in Great Britain. You will find some official and other statistics of this degeneration in the paper on school hygiene, which is in your hands.

Permit me to state but one fact, namely, that in 1845, out of 1,000 recruits, only 105 were under five feet six inches, while in 1874 more than three times as many, namely, 364, were under that height, and consequently the standard of recruits was necessarily and gradually diminished to five feet four-and-a-half inches, and the maximum of age increased from twenty-five to thirty-years. Lord Beaconsfield said, in 1872, in the Free Trade Hall at Manchester, "After all, the first consideration of a Minister should be the health of the people;" further, "If the stature of the race every ten years diminishes, the history of that country will soon be the history of the past." According to the views of the Prime Minister, the history of England will soon be the history of the past, and Macaulay's *New Zealander* has, therefore, hopes of sitting sooner than expected on the ruins of London Bridge. According to the *Times* of October, 1878, the present Ministry took office with a sanitary programme, which, as yet, they have done nothing to fulfil. Although twenty-four months have passed since, the Education Department has not taken any steps for introducing elementary hygiene and scientific physical education as obligatory studies.

There is scarcely time to enter on the practical introduction of scientific physical education into schools, which should form part

of this address. Before reading a few suggestions on this subject, I will just mention that the Swedish Government and Parliament were the first to establish and support, in 1813, the Royal Swedish Central Training Institution, for Gymnastics, at Stockholm, in which officers of the army, medical men, and male and female teachers, after having previously obtained their certificates, are for two years gratuitously instructed in the various branches of scientific gymnastics—including hygiene, anatomy, physiology, the history, theory, and practice of rational gymnastics, as well as the knowledge of several internal complaints, and of various deformities and their gymnastic treatment.

During my last holidays I visited this institution, and, by the kindness of the professors and teachers, was able to convince myself of the excellence of the arrangements, as well as the theoretical and practical methods of instruction. There is a similar institution in Berlin, also in Wurtemberg and some other countries, but none can rival the Swedish one.

Two years ago I sent a young physician abroad for the purpose of obtaining information regarding scientific physical education on the Continent. Having prepared a list of fourteen questions, my commissioner obtained official answers from their Excellencies the Ministers of Education in Belgium, Prussia, and Austria. He had besides to report on the practical physical training in the schools which he visited in Paris, Brussels, Ghent, Berlin, Vienna, and Milan. An extract from this report is published in the pamphlet I have mentioned. The aim in making these inquiries was to gather information for myself, and to enable me to show Parliament and the Education Department how behindhand we are in an important branch of education, how many lives we sacrifice, how many diseases we cause, and how many millions of money we lose by the loss of valuable lives, and by supporting in workhouses, hospitals, and charitable institutions large numbers of people unable to work in consequence of disease and deformity. Having met with failure in my endeavors, I have accepted with much pleasure your invitation of addressing you, in hope that, by the powerful aid of this Conference, any suggestions I have to make may be carried out.

The School Board of London is the only one in England which has appointed a perfectly competent lady superintendent of scientific physical education, who is at present engaged in giving three elementary courses to the schoolmistresses who voluntarily attend. A small number of schoolmistresses passed an examination last year, and could at once introduce what they have learnt hitherto, but no time is given or fixed for physical exercises, which should be considered as the other subjects of instruction. In many schools there is no sufficient space for exercises, nor sufficiently large rooms in which the furniture could be easily removed in a few minutes. The covering and partial enclosure of playgrounds is an additional expense to which the ratepayers object. But, even if these impediments were removed, there is still the want of inducement for these teachers giving gratuitously their time and work, and thereby lessening their chance of passing their pupils in the subjects for which they are paid.

To make the resolution practical several modes might be suggested:—

1. To send a deputation of this Conference, accompanied by a number of influential members of Parliament, to the Lord President and Vice-President of the Committee of Council on Education, to impress upon them the necessity of establishing a Central Training Institute for Physical Education, or to subscribe to a few or all training colleges for the purpose of enabling them to give a similar instruction to all future teachers.

2. To petition Parliament to grant payment to the teachers who, at present, being paid only for reading, writing, and arithmetic,

cannot be expected gratuitously to give their time for learning and teaching, or to ask for a Royal Commission.

3. Formation of a society for the instruction of popular practical hygiene and scientific physical training, which are most intimately connected—a society which has been suggested by the *Educational Times*.

PROGRESS OF EDUCATION IN JAPAN.

To the Editor of the *Canada School Journal*.

SIR,—The enlightened senior Vice-Minister of Education in Japan, (Justice TANAKA—FUJIMARA,) with whom I formed a pleasant acquaintance at Philadelphia, has just sent to me his annual report on the state of schools in Japan in 1877-78.

In an introductory paragraph, Vice-Minister Tanaka speaks of a fear that was entertained that serious educational embarrassment would be felt throughout the country owing to the "serious political events which had occurred" in the empire. "It is gratifying to find, however, that these fears were groundless. "The impetuous current of progress," he says, "was too strong to be retarded by such impediments, and society is to be congratulated that not only has the work of the educational system not been arrested, but it has made a steady and uninterrupted advance during the year." As an evidence of this, the Vice-Minister states that in the seven grand school districts or areas into which the empire is divided, the number of elementary schools established was 25,459, of which 24,281 were higher schools, and 1,178 private—being an increase of 794 public schools and a decrease of 282 private schools, showing a net increase of 512 elementary schools. The number of teachers employed was 57,933—56,658 male and 1,275 females. This shows an increase of 7,364 male and 297 female teachers over the number employed during the preceding year. The number of pupils in these schools was 2,162,962—of these, 1,552,410 were boys, and 543,768 girls in the public schools, and 42,332 boys and 24,452 girls in the private. The average attendance at the 25,459 schools was about 85 pupils per school. Compared with the attendance at the schools during the previous year these numbers show an increase of 58,287 boys and 41,881 girls at the public schools. There is, however, yet a vast proportion of the children in Japan of school age, in fact the great majority of them, who do not attend school at all. Thus out of a school population of 5,251,807, only 2,094,298 received instruction, while 3,158,870 attended no school whatever, or received instruction of any kind.

It is nevertheless most gratifying to note that the number who attend school are rapidly increasing, and that while the attendance of boys at the schools had increased 3.93 per cent., the attendance of the girls had increased 8.34 per cent. The percentage in the number of female teachers employed is also sensibly increased. It is noted that while there was a decrease of 111 male teachers in the private schools, there was an increase of eighteen female teachers in the same schools. In the public schools the increase was more marked, it being fourteen per cent. of male teachers as compared with an increase of twenty-three per cent. of female teachers employed. This increase may be accounted for from the fact, that during the year two additional Normal Schools, exclusively for females, were established, and five others already established were opened to females, which had been previously closed to them. These facts indicate a gratifying and growing interest in female education in this old Eastern empire. It is an evidence of appreciation in Japan of the care and culture of women, which is characteristic of European and American civilization, with which that empire has within the last few years been brought into close contact.

The income of the higher schools for the year is set down at \$6,700,000. Of this sum, \$2,688,000 were derived from "school district rates," \$736,000 from "voluntary contributions," \$393,000 from school fees, and \$545,000 from the Government. The expenditure was \$5,365,000. Among its items are, \$2,640,000 for teachers' salaries and \$424,000 for books and apparatus. The value of schoolhouses in the empire is estimated at \$3,164,000; of sites, or school grounds, \$265,000; of school apparatus \$1,051,000, and of school books \$816,000.

There are other matters of interest, relating to high schools and colleges, to which I shall hereafter refer.

Very truly yours,

J. GEO. HOBBS,

Deputy Minister of Education.

THE SUPERANNUATION FUND.

To the Editor of the *Canada School Journal*.

MR. EDITOR,—At the last meeting of the Ontario Provincial Teachers' Association, a deputation was appointed to wait on the Hon. the Minister of Education, and lay before him a resolution concerning the Superannuation Fund.

The resolution was to the following effect:—That in justice to the teachers of the Province, the clause relating to the Superannuation Fund, which provides that teachers shall teach until sixty years of age, unless disabled, should be amended by introducing a clause giving them permission to retire after twenty-five years' service.

The Minister received them kindly, but said that he was not prepared, just at present, to deal with the matter; he however promised to take the subject up during the next summer, and suggested that some other improvements might be made in the Act.

In view of this promise, I think it would be well that those interested in the matter should give their ideas now, so that when the Minister does take up the subject he may know what the teachers desire, and an Act may be passed that will be definite and satisfactory to all concerned.

I have therefore presumed, Mr. Editor, to send you the few ideas I have on the subject, in the hope that you may find room for them in some corner of your valuable paper, and that other teachers may be induced to give their ideas also.

First then I will remark that it seems to be a pretty general opinion that teachers should be allowed to retire after twenty-five years' service. I do not think that teachers are very exorbitant in their demands when they ask to have the option of retiring after having been in active service for a quarter of a century. The British Government was satisfied to pension off her soldiers after twenty-one years' service, and then gave them a pension to which they had not contributed, while all are aware the teacher does towards his.

The Minister objected, when the deputation argued this point, that the country would lose the services of good teachers while there was still work in them. Well, granting, for argument, this to be true, I think the country should be satisfied with so long a period of faithful service. But as a matter of fact, I do not think the Minister's fears would be realized. I do not see why the teacher should retire on his pension at that age unless compelled by infirmity. His pension at any rate would scarcely be sufficient inducement to make him, especially since the longer the term of service the larger the retiring allowance; so that if he felt able to teach, we may be pretty sure he would continue to do so, and if he did not feel able, then it would be to the interest of the country that he should be allowed, nay, compelled to retire.

Still, in order partly to meet this objection of the Minister, the teacher may be allowed to retire after having taught on a Provincial Certificate for twenty-five years. The teacher would then be somewhere about fifty years of age, just about the age when he, in many cases, begins to find it impossible to keep up to the times, he becomes old and antiquated, his usefulness is about gone. If however he feels he can still do good work, it is optional whether he retires or not. If he retires, he must be satisfied with a much smaller income, and I do not think he will do this if he feels physically and mentally able to earn a larger sum.

I have endeavored then to show that the twenty-five year clause may be an advantage to the teacher, and cannot be a disadvantage to the country, so far as service is concerned.

There is another point I wish to notice, which was mentioned by both the Minister and the deputation, and that is that the pension when it does come is so small as to only go part of the way towards "keeping the wolf from the door." Now, if it only helps to keep the wolf away, how is the worn-out veteran to supplement that help? The Minister suggested that the teachers should pay a larger sum annually than at present, and thus have a larger allowance. I believe the teachers do not desire anything unreasonable, and I feel sure they will cordially agree to anything of this kind which the Minister may propose. I would be quite willing to see the present compulsory amount increased, always supposing the Government gave a corresponding increase, and in addition I would like to see the teachers allowed the option of paying in a further amount on which the Government should give, say, only half a dollar for every dollar paid in. This optional amount may be so limited that in no case should the retiring allowance be greater than about fifty percent. of what the teacher could earn while in active

service; thus he would have no very great inducement to retire, unless incapacitated by infirmity or some other cause.

We will suppose that the average salary for first-class teachers is seven hundred dollars, then the maximum retiring allowance may be fixed at three hundred and fifty. Now, the present Superannuation Fund would allow this teacher for twenty-five years' service about one hundred and seventy-five dollars, and if he had paid in the optional amount of fourteen dollars each year he would be entitled to seven dollars for each payment, that is another hundred and seventy-five dollars, or three hundred and fifty in all. The teacher would have denied himself considerably during the years of his active service, and without adding so much to the expense of the country would be entitled to a modest income, sufficient with great economy to keep the wolf entirely from the door.

The retiring allowance for the only other grade of Provincial Certificate, namely, the second class, may be the same, or a smaller sum than for first-class. If the sum were smaller it would furnish an additional inducement to the teachers to rise to the higher class. I only notice the holders of old first-class County Board certificates to say that I think that they should share with the most favored class of teachers.

There are some other points which I should like to mention, such as the allowance to the representatives of a deceased teacher, or to teachers leaving the profession, but a regard for the space at your disposal makes me draw these remarks to an abrupt close.

I hope, however, that other teachers will be induced to give their ideas on the subject, and that the fund will be placed on a footing that will be satisfactory to all concerned.

TEACHER.

Mathematical Department.

Communications intended for this part of the JOURNAL should be on separate sheets, written on one side only, and properly paged to prevent mistakes. They must be received on or before the 20th of the month to secure notice in the succeeding issue, and must be accompanied by the correspondents' names and addresses.

DETERMINATION OF THE RATIONAL BINOMIAL FACTORS OF ANY POLYNOMIAL.

1. If in any function of x the coefficient of the highest power of x be unity, and the other coefficients be whole numbers, the binomial factors are of the form $x-k$, where k cannot be a fraction.

For if possible let $k = \frac{a}{b}$, a fraction in its lowest terms; i.e., let $x - \frac{a}{b}$ be a factor of

$$x^n + p_1x^{n-1} + p_2x^{n-2} + \dots + p_n \quad (1)$$

in which the coefficients are all integral. Then

$$\left(\frac{a}{b}\right)^n + p_1\left(\frac{a}{b}\right)^{n-1} + \dots + p_n = 0.$$

Hence, multiplying by b^{n-1} and transposing,

$$\frac{a^n}{b} = p_1a^{n-1} + \dots + p_nb^{n-1};$$

that is, a fraction in its lowest terms is equal to an integer, which is impossible. Hence the binomial factors of (1) are of the form $x-a$, where a cannot be fractional; it may be a surd, but we shall confine our attention to the determination of factors of the form $x-a$, where a is a whole number.

2. Suppose $x-a$ to be a factor of (1). Then by a well-known theorem,

$$p_n + p_{n-1}a + p_{n-2}a^2 + \dots + p_1a^{n-1} + a^n = 0.$$

Divide by a , and

$$\frac{p_n}{a} + p_{n-1} + p_{n-2}a + \dots + p_1a^{n-2} + a^{n-1} = 0.$$

Hence, $\frac{p_n}{a}$ must be a whole number; denote it by q_1 . Then, dividing by a again,

$$\frac{q_1 + p_{n-1}}{a} + p_{n-2} + \dots + p_1a^{n-3} + a^{n-2} = 0.$$

Hence, $\frac{q_1 + p_{n-1}}{a}$ must be a whole number; denote it by q_2 .

Then, dividing by a again,

$$\frac{q_2 + p_{n-2}}{a} + p_{n-3} + \dots + a^{n-3} = 0.$$

Proceeding in this way we at length obtain

$$\frac{q_{n-1} + p_1}{a} + 1 = 0.$$

Hence that $x-a$ may be a factor of (1), the last term p_n must be divisible by a , so must the sum of this quotient and the next coefficient (p_{n-1}); so must the sum of this second quotient and the next coefficient (p_{n-2}); so must the sum of this third quotient and the next coefficient (p_{n-3}); and so on, continuing this uniform operation, the sum of each coefficient and the preceding quotient is divisible by a , and the final quotient is -1 .

Hence to find the binomial factors of (1), find the factors of the term p_n , that does not involve x . Let a be one of these factors. Divide p_n by a , and to the quotient add p_{n-1} ; divide this sum by a , and to the quotient add p_{n-2} , &c. If the final result be -1 , we conclude that $x-a$ is a factor of (1); but if the final result be not -1 , or if at any stage the division by a produces a fraction, we conclude that $x-a$ is not a factor.

It will be seen by those acquainted with the Theory of Equations that the above is an adaptation of Newton's "Method of Divisors."

NOTE.—The number of factors of p_n to be tried may be lessened by observing that if $x-a$ be a factor, $\frac{f(m)}{a-m}$ is an integer, m being any integer whatever. [Here we denote (1) by $f(x)$, and therefore $m^n + p_1m^{n-1} + \dots$ by $f(m)$].

For, by a theorem previously referred to, $f(m)$ is the remainder on dividing $f(a)$ by $a-m$. Hence

$$\frac{f(a) - f(m)}{a - m} = \text{an integer.}$$

But if $x-a$ be a factor of $f(x)$, $f(a) = 0$; hence

$$\frac{f(m)}{a - m} = \text{an integer.}$$

In applying this test it will be found most convenient to let $m = \pm 1$, for then $f(m)$ is most easily calculated, and the test most quickly applied.

Ex. Find the rational binomial factors of $x^3 + 8x^2 - 8x + 10$.

Here the factors of 10 are $\pm 1, \pm 2, \pm 5, \pm 10$. Since the expression does not vanish for $x = \pm 1$, neither $x-1$ nor $x+1$ is a factor.

Next apply the preceding text: Let $m=1$; then $f(1)=6$; hence ± 10 and ± 5 are excluded, since 6 is not divisible by 9, -11, or 4. Let $m=-1$; then $f(-1)=20$; hence ± 2 is excluded, since 20 is not divisible by 2-(-1), or 3. Consequently the only numbers we need try are -2 and -5 .

$\frac{10}{-2} = -5$; $-5-8 = -13$; $\frac{-13}{-2}$ = a fraction, and we need not proceed any farther with -2 .

$\frac{10}{-5} = -2$; $-2-8 = -10$; $\frac{-10}{-5} = +2$; $+2+8 = +10$; $\frac{+10}{-5} = -2$.

Hence $x+5$ is a factor.

It is customary to arrange the work as follows, putting down the successive quotients and sums in a column with the number we are testing at the head:

-2	-5
-5	-2
-13	-10
×	+2
	+5
	-1

Ex. Find the rational binomial factors of $x^4 - x^3 - x^2 + 19x - 42$. Here the factors of 42 are

$$\pm 1, \pm 2, \pm 3, \pm 6, \pm 7, \pm 14, \pm 21.$$

Evidently ± 1 are excluded. Next apply the test: Let $m = 1$; then $f(1) = -24$; hence $\pm 21, \pm 14, \pm 6$, are excluded, since 24 is not divisible by any of the numbers 20, -22, 18, -15, 5, -7. Let $m = -1$; then $f(-1) = -60$; hence $+7$ is excluded, since 60 is not divisible by $7 - (-1)$ or 8. Consequently the only numbers we need try are $\pm 2, \pm 3, -7$. Using the arrangement employed at the end of the last example, we have

+2	-2	+8	-8	-7
-21	21	-14	14	6
-2	40	5	88	25
-1	-20	x	-11	x
-2	-21		-12	
-1	x		4	
-2			8	
-1			-1	

Hence the factors are $x-2$ and $x+8$.

8. Let the expression whose binomial factors are to be found be of the form $p_0x^n + p_1x^{n-1} + \dots + p_n$, where the coefficient of x^n is no longer unity.

Multiply through by p_0^{n-1} , and let $p_0x = y$. The expression then becomes

$$y^n + p_1y^{n-1} + p_2p_0y^{n-2} + \dots + p_{n-1}p_0^{n-2}y + p_np_0^{n-1}.$$

The factors of this, found as before, will be of the form $y+a$ or $y+b$, &c. But $y = p_0x$; \therefore the factors of the original expression are p_0x+a , p_0x+b , &c., which, however, may require to be reduced by dividing by a numerical factor common to both terms.

Ex. Find the binomial factors of $8x^3 - 26x^2 + 84x - 12$.

Multiply through by 8², and we obtain

$$(8x)^3 - 26(8x)^2 + 84 \times 8(8x) - 12 \times 8^3.$$

i.e., if $8x = y$,

$$y^3 - 26y^2 + 102y - 108.$$

The factors of 108 are

$$\pm 1, \pm 2, \pm 3, \pm 5, \pm 6, \pm 9, \pm 12, \pm 18, \pm 27, \pm 36, \pm 54.$$

Evidently ± 1 are excluded. Also $f(1) = 81$, and all the rest of the factors are excluded except $+2$. Trying this we have

2
-54
48
24
-2
-1

Hence $y-2$ is the only binomial rational factor; and therefore $8x-2$ is the only binomial rational factor of the original expression.

PROBLEMS.

James Park, of Chatham, sends the following questions in Astronomy:

1. If the Right Ascension and Declination of a star be found by observation to be $142^\circ 14'$ and $85^\circ 17'$, S., respectively, find its Latitude and Longitude.

2. When the sun's Longitude is $48^\circ 47'$, find his Right Ascension and Declination.

3. If by observation it is found that the Sun's Right Ascension is $72^\circ 85'$ and his Declination $22^\circ 80'$, find the obliquity of the Ecliptic.

4. If the Sun's Longitude be $202^\circ 24' 15''$, and the Moon's Latitude and Longitude be $4^\circ 54' 80''$, N., and $89^\circ 25' 80''$, respectively, find the angular distance between their centres.

"Kink" and W. F. M. Your solutions are not correct. You will not be able to find elementary solutions for the problems in question.

J. A. D. So many months have elapsed since we asked for your

name that we have lost our note on the matter, and are unable to recollect the purpose for which we wished it.

E. O. asks for a solution of the following:

A loans B ten thousand dollars at five per cent. simple interest, payable half-yearly. Afterwards A would like to have the interest monthly and in advance; find the average monthly interest.

At the given rate of interest \$1 will amount to \$1.025 in six months; and the only equitable solution will be to find the sum which, paid at the beginning of each month, will in six months at compound interest amount to \$0.25. If x be this sum,

$$.025 = x(1.025)^{-\frac{1}{6}} + x(1.025)^{-\frac{2}{6}} + x(1.025)^{-\frac{3}{6}} + \dots + x(1.025)^{-\frac{6}{6}}$$

$$= x(1.025)^{-\frac{1}{6}} \frac{(1.025)^{\frac{6}{6}} - 1}{(1.025)^{\frac{1}{6}} - 1}$$

or $1 = x \cdot \frac{1}{1 - (1.025)^{-\frac{1}{6}}}$

$\therefore x = 1 - 995898 = .004107.$

Hence monthly interest on \$10,000 is \$41.07.

We fail to see why the expression "simple interest" is used in the problem.

MR. EDITOR,—Our School text-books give several different ways of dealing with partial payments on notes, &c., due on demand, with simple interest. By one method we subtract each payment from the principal, leaving the interest to be paid at the time of settlement. This, of course, injures the lender by withholding the interest on all his loan while only a part of it remains at interest. To take an extreme case, when the sum of the payments equals or exceeds the principal the balance may remain unpaid for an indefinite time without increasing. By another and more common method, each endorsement applies first to the payment of interest, and any excess of payment over the accrued interest applies to the discharge of principal. This is unfair to the borrower, since, in simple interest, no part of the interest is due until the principal is due. Should it happen that the payment does not exceed the interest accrued the payer gains nothing, but simply loses the use of his money until the time of next payment. The Connecticut rule, the Merchants' rule, and several others used in New England, are more or less open to the same objections.

Principal and therefore interest being due on demand, it follows that when payment of a part of the principal is demanded (or accepted), interest is due on that part only. Hence the following rule:—

Divide each payment by the amount of \$1 at the time when the payment was made. Subtract the result from the principal. The balance is that portion of the principal still due and bearing interest from the original date.

This method seems just to both parties. Has it ever been published?

J. V., St. Stephen, N.B.

[We are unable to say whether J. V.'s rule has ever been published, but it appears entirely equitable, which cannot be said of the other methods to which he refers.—Ed.]

Practical Department.

HOW TO GRATIFY AND DEVELOP THE NATURAL DESIRE FOR MENTAL ACTIVITY.

BY JAMES HUGHES, INSPECTOR OF SCHOOLS, TORONTO.

Activity is one of the instincts of childhood. It is not happy unless the mental or physical powers, or both, are engaged. "Productive activity" is the corner-stone of the delightful and truly

philosophical system of Froebel. Give a child work to do of a character suited to his age, let it call his mental faculties and manual abilities into play, and he will be *attentive*, not merely because he is occupied, but because his occupation gives him delight. Fellenberg says: "Experience has taught me that *indolence* in young persons is so directly opposite to their natural disposition to activity, that unless it is the consequence of bad education, it is almost invariably connected with some constitutional defect." Hailman says: "Perhaps attention and activity of the mind are convertible terms; for we observe that the mind is never attentive, unless it is aroused to action by some external cause (such as a wonderful object, an exciting scene, a thrilling narrative, a deep sorrow), or by an internal cause—the will." It is important, therefore, in order to secure attention, that every means be taken to awaken and satisfy the child's *mental activity*. To do this it will be found necessary to attend to the following:—

1. Do as little telling as possible when teaching. Of course, the teacher should not try to teach everything by experiment, as he would waste time in doing so. The accumulated knowledge of the ages is a store from which the pupils ought to be allowed to draw largely without making all the necessary discoveries and progressive steps themselves. But whenever the teacher can lead his class in the development of a subject he should do so. He should not allow them to wander in search of the gold mines of knowledge, neither should he dig the gold and coin it for them. The word for "schoolmaster" in the Welsh language has a very suggestive meaning. The word for school is "Ysgol," which conveys the meaning at once of progression in learning being step by step, commencing at the lowest rung and going upwards. The Welsh name for schoolmaster is "Ysgolfeister," the full significance being "One that teaches to climb." The teacher should not merely climb himself and throw down to his pupil the treasures which he finds. He should teach each pupil to climb for himself, so that as he goes higher he may grow stronger. "This need for perpetual telling is the result of our stupidity, not the child's. We drag it away from the facts, in which it is interested, and which it is actively assimilating for itself; we put before it facts far too complex for it to understand, and therefore distasteful to it; finding that it will not voluntarily acquire these facts, we thrust them into its mind by force of threats and punishment; by thus denying it the knowledge it craves, and cramming it with knowledge it cannot digest, we produce a morbid state of the faculties, and a consequent disgust for knowledge in general; and when, as a result partly of the stolid indolence we have brought on, and partly of still continued unfitness in its studies, the child can understand nothing without explanation, and becomes a mere passive recipient of our instruction, we infer that education must necessarily be carried on thus. Having by our method induced helplessness, we straightway make the helplessness a reason for our method." *

2. Give the pupils their rightful share in the work of study. Too much dependence is placed on eye teaching by many teachers. The observant faculties are certainly of great importance, and the teacher who develops them to a high degree will be well repaid for his trouble. Pupils may see a great deal without receiving fixed impressions, however. Seeing does not require intensity of attention. The teacher cannot always be certain that the looking child is thinking about the subject in hand. He may look at the teacher, or the blackboard, or at an object, and yet be thinking about his last fishing experience. To require each pupil to do for himself, is the only way of absolutely compelling him to attend. It is not receiving knowledge that fixes it in the minds of pupils, but reproducing it. If it can be reproduced by the hand in

a visible form, the attention is necessarily continuous. The mind must attend if it has to guide the hand. Each pupil should do for himself the map the teacher draws on the board; he must do the correction of his own mistakes; and if he is made to do work with his hands in learning any subject by even writing down the statements made concerning it, the impressions made will be more permanent than if made in any other way. The inattention so lamentably noticeable in most Sunday Schools and many Public Schools is due to the fact that pupils are mere recipients of information and not *active participators* in the process of learning. They are hearers when they should be doers.

3 Do not weary the minds of the pupils. A proper amount of physical exercise produces beneficial effects on the muscular system; beyond a certain point it is exhaustive. So a judicious amount of mental exercise strengthens and develops the mental powers, but study after the "fatigue point" has been reached has a debilitating effect. The moderate use of the physical powers gives pleasure, and increases the longing for exertion; so the judicious application of the mind awakens greater desire for study, and gives additional power to investigate the problems which may be presented for thought. Professor Pillans held that, "where young people are taught as they ought to be, they are quite as happy in school as at play, seldom less delighted, nay, often more, with the well-directed use of their mental energies, than with that of their muscular powers."

4. Do not overload the minds of the pupils. The carrying power of a child's mind is frequently over-estimated by teachers. Many brilliant boys are made to carry such large loads of knowledge during their school days, that they become mentally paralyzed to a certain extent, and never recover their full vigor of thought. This partly accounts for the fact that so many clever school boys turn out to be only mediocre men. Over-eating causes dyspepsia and destroys the appetite for food. There are mental dyspeptics.

5. Have matches in the various school subjects. Who does not remember the enlivening effects of the spelling matches of his boyhood? So intensely was their attention concentrated upon the subject in hand, that grown men remember distinctly the very words missed by themselves and others in some remarkable contests. Such matches may just as well be conducted in reviewing the other school subjects as in spelling, and their effects in inspiring classes will always be found to be very beneficial. They should not be held at stated times, or conducted in a formal and indifferent manner by the teacher, or they will lose their interest.

6. Let pupils question each other. The contests which will awaken the highest degree of mental activity on the part of pupils are those conducted by themselves. Confine them to the work actually taught and give them due notice, and such exercises will produce the most satisfactory results. No other plan will set pupils to work for themselves more earnestly and intelligently. It is a good plan in some subjects to prepare a series of questions for the pupils covering the work to be learned. These should not be given that the pupils may merely prepare answers to them, to be recited in a parrot-like manner. They should simply guide to the golden thoughts. They may be of use also to the pupils in preparing for the contests recommended. Professor White, of Oberlin College, says: "The pupils of a certain high school failed to be instructed in 'The Science of Government,' in which weekly exercises had been given to them for nearly a whole term. In despair the principal wrote carefully two hundred questions, covering the whole work. These he placed in the hands of each pupil, and dividing the whole school into two sides, allowed each in turn to question the other side, till he obtained a satisfactory answer, while he sat by to watch the 'slaughter of the innocents.'

* Intellectual Education.—Herbert Spencer.

The first exercise was a failure, seeming merely to amuse the school; the second was successful, and the fifth was brilliant."

7. Question while teaching. Some teachers only ask questions while reviewing. This is a serious mistake. To test knowledge is certainly one of the functions of questioning, but it is a subordinate one. Socratic, Instructive, Teaching, or Developing questioning is the most efficacious mode of teaching. It does not simply give information; it arouses the minds of pupils to activity, guides the active minds in the acquisition of knowledge, and sets the stored minds upon the plan of using the information obtained. It develops not only *receptive*, but *productive activity*. "He who gives knowledge to the human mind is a benefactor; but far greater is he who by giving knowledge quickens into activity and productiveness the mind upon which he works. The true teaching process involves the power of *intellectual quickening*, which is that process by which the teacher excites the intellectual powers of his pupils to self-activity in the line of his teaching; and to be really effective it must also lead to the courses of thought, feeling, purpose, and action, which are the proper products of the truth taught."

Teachers should talk and tell less, and draw out more. Questioning from the known to the unknown welds the links in the chain of knowledge as they are formed, so that when completed they are not merely isolated facts. It gives a pupil a conscious power to show him that he can overcome difficulties for himself.

8. Use Illustrations. There are several kinds of illustrations. The following should be largely used in teaching:—

1. Blackboard illustration.
2. Picture, map, and chart illustration.
3. Model illustration.
4. Object illustration.
5. Illustration by experiments.
6. Dramatic illustration.

1. Blackboard illustration is of more use than any or perhaps all other kinds of illustration. Every teacher can use it; no teacher should try to teach without it. Its superiority over other methods of illustration consists chiefly in the fact that the work grows in the presence of the pupils. They see it made and help to make it, either by actually handling the crayon, or by making suggestions step by step as to what should be done next. The teacher who presents a finished illustration to his class weakens its effect by at least one half. It is nearly as bad to do the whole illustration, even in the presence of the pupils, without explanation to them, or assistance from them at every step. Some teachers work the complete solution of a problem on the board, when illustrating a new rule in arithmetic or algebra, without speaking or even looking at the class until they have finished it. Then they turn round and give the explanation in the stereotyped question, "Do you see?" They would have interested their pupils a great deal more, and have educated them nearly as much, by tossing a copper for "heads or tails." The following rules should be practised in blackboard illustrations:

1. Let the work done be simple in its character.
2. Avoid symbolism, rebuses, &c.
3. Arrange the steps in the process of thought in logical order.
4. Number the various steps either by figures or letters.
5. The steps in the illustration should be done as the process of thought is developed.
6. When illustrating distinctive characteristics, peculiarities of growth or construction, &c., in teaching botany, zoology, natural philosophy, &c., it is well to exaggerate the special parts to which attention should be directed.

7. In solving a problem, making a diagram, drawing a map, explaining the construction of a machine, in fact in all kinds of blackboard work, every pupil ought to do on slate or paper what the teacher does on the board, and usually part by part after him.

2. Picture, map, and chart illustration may be used in conjunction with blackboard illustration, both preceding and following it, to give a correct idea of things as *wholes*, and to show in some cases the coloring, &c. They ought to be used too in testing the accuracy of the work done by the teacher and pupils. For instance, when a map has been sketched it should be compared in its leading outlines with the actual map, to see whether the great features bear their proper relations to each other; whether Florida extends further south than California, etc.

3. Model illustration is used by some teachers very successfully by cutting out the shapes of things or their parts from brown paper, &c. Models of machines, of the parts of the human frame, &c., may be obtained, which will be of great use in teaching some subjects. Good teachers, however, usually try to make most of their own models.

4. In object illustration the pupils should not merely *look at* the things used. They should take them in their hands and *examine* them. This will enable them to get additional ideas through the sense of touch, and will clearly define those received by looking at the object at a distance. It will also give them a deeper interest in the object to be permitted to handle it. It is sometimes well to state the nature of the information desired before passing an object around, but frequently the pupils should be required to examine specimens with the view of finding out as much as possible about them. This will make them independent observers.

5. Illustration by experiments should as far as possible be conducted on the same principles as object illustration. It produces its highest results when every student performs for himself the experiments described by the teacher. If this cannot be done, the pupils, unless the class be too large, should assist the teacher, each taking some part in preparing for the experiment.

6. Dramatic illustration means representation by action. The living, energetic teacher uses this method of illustration very largely, and if appropriate it always aids greatly in communicating knowledge. It is of much use in giving ideas of shape, size, direction, motion, action of machines, &c. Any one who has ever seen a deaf mute address an audience by *signs*, must have realized to what an extent action may be even substituted for speech. A good teacher always uses his hands and arms to emphasize and illustrate what he says to his class.

In all kinds of illustration it is well to keep the pictures, charts, maps, models, objects, apparatus, &c., out of sight as much as possible until the time arrives for using it. This stimulates the curiosity of the pupils and prevents the distraction of their attention. To show pictures at once, or to present the spectacle of a table covered with apparatus, is a capital method of gaining attention to the pictures or apparatus. It may make it all the more difficult, however, on this account, to get the attention concentrated on the lesson itself.

SCHOOL MANAGEMENT.

BY J. BALDWIN.

Enforcement of Regulations.

How shall I enforce the regulations? How am I to manage to induce the pupils to cheerfully observe the rules?

Few questions are more important, or more difficult to answer. Each one must take into consideration all the conditions, and then

do the best he can. The thoughts here presented are aimed to be suggestive.

REGULARITY.

Irregularity, in country schools especially, is a serious evil. No effort should be spared to reduce it to the minimum.

1. *Intensely Interest the Pupils.* Make the school in the highest degree attractive. Have each one feel that each day is of great value. Point out how closely regularity is connected with success. Deeply interested pupils will generally manage to be regular.

2. *Interest the Parents.* Show how it is that an irregular pupil falls behind his classes and becomes discouraged. The intelligent parent will not willingly detain a child from a single recitation. Teachers must do much missionary work of this kind.

3. *Urge Regularity as a Duty.* The pupil should make the most of himself. He should not act so as to injure others.

4. *Inflict Necessary Punishments.* To say the least, irregularity is a misfortune for which the pupil must suffer. If it becomes chronic, it should work a forfeiture of seat, of position in class, or even of position in school.

PROMPTITUDE.

Than this, no topic connected with school management has been more widely discussed. The general tendency is in the right direction. Schools vie with each other in the effort to secure the utmost promptitude.

1. *Let the Teacher be Prompt.* Usually, the teacher should be at the school-room at least a half hour before the time of opening. The teacher's example greatly influences the pupils.

2. *Impress the Importance of Promptitude as a Habit.* Point out the advantages of promptitude and the evils of tardiness. Show the effects all through life. Give examples. Washington once said to a tardy officer, "Sir, you may waste your own time, but you have no right to waste ours." A healthy sentiment is thus created. Tardiness comes to be considered a misfortune and a disgrace.

3. *Make the Opening Exercises Especially Interesting.* Manage it so that each pupil will even be anxious to be present. The ingenious teacher will know how to do this.

4. *Inflict Right Punishments.* The tardy list works well in some schools. As the tardy pupils enter, they write their names and the minutes tardy. At rest, when the others pass out, these take the tardy seat. If the explanation shows a case of necessary detention, the pupil is excused; otherwise he remains seated during the rest. In some schools tardiness from whatever cause suspends for one day. The pupil remains in seat, but is not permitted to recite. Three cases of tardiness suspend for a month or a term.

5. *Arrange for Exceptional Cases.* Promptitude must be secured at any cost. In some schools tardiness is unknown. But simple justice requires provisions for exceptional cases. Such persons are not considered tardy up to a fixed time. Absolute necessity must characterize all such cases.

6. *Adapt the Treatment to the Community.* The course pursued in the country schools may not be best in city schools. Even in different localities in the country different means must be used. Public sentiment will not sustain extreme measures. Promptitude must be secured by skilful management. Any community may be educated to sustain teachers in enforcing strict promptitude.

DECORUM.

This should characterize every voluntary act. Positions, movements, dress, manners, and conduct in school and out, are some of the points to be considered.

1. *The Teacher Should be a Model.* Pupils tend to become like the teacher; hence good manners is an essential qualification of

the teacher. An uncouth, ill-mannered, slovenly teacher should never be permitted to disgrace the school-room.

2. *Decorum Conditions Success.* The well-behaved are everywhere preferred to the ill-behaved. He is a gentleman," is the best of all passports. When pupils are made to realize that the teacher is a lady, it is not difficult to persuade them to try to be decorous.

3. *Teach Decorum Incidentally.* Lectures on the subject do little good. Children must have concrete cases. As these occur, briefly call attention to them, and commend the decorous.

4. *Train to the Habit of Decorum.* Precept is good; example is better; training is best. Training converts precepts and examples into habits. Manage to have the pupils act decorously until decorum becomes a habit. Train them to conduct themselves properly everywhere, and at all times.

5. *Right Punishment may be Used.* Some pupils cannot be reached in any other way. Whatever will work in the pupil an appreciation of good manners and proper conduct, is legitimate. The earnest and continuous efforts to be decorous will soon grow into a life habit.

QUIETUDE.

Study to be quiet—is imperative. All pledge themselves to sustain this regulation. It should be boldly written over every teacher's desk.

1. *Be Quiet Yourself.* A fussy, noisy, boisterous teacher demoralizes the school. Talk in a low tone, move quietly, and avoid all clapping, pounding and stamping. Energy and vigor should be manifested in better ways. It is the lightning that kills.

2. *Secure Quiet from Principle rather than from Fear.* One pupil has no right to disturb others. The effort to be quiet tends to the general good, and hence is a duty.

3. *Boisterousness in the School-Room must Never be Permitted.* During rests, talking and laughing are proper and should be encouraged, but all romping, scuffling and boisterousness must be tabooed.

4. *Train Pupils to the Habit of Quietude.* If a pupil does anything noisily, have him repeat the act quietly. Soon your pupils will become toned down, and will speak and move quietly. Your school will become a quiet, cheerful home.

5. *Use Necessary Punishments.* Some vicious and careless pupils cannot otherwise be cured of noisy habits. Don't mistake. Don't tell the children to sit still. The school-room is a work-shop, and is dedicated, not to silence, but to arousing and directing mental forces. Activity necessitates noise. But the noise of moving classes, of work on board and slate, of live, earnest recitation, is music. Only unnecessary noise is discord.

HOW TO READ HISTORY.

BY MRS. ANNIE SAWYER DOWNS.

The idea often entertained in regard to reading history would be amusing if it were not pitiable. People say, as if announcing inevitable trial: "I really must read some history; I am mortified that I have read so little. Would you begin with Rollin?"

"Why Rollin?"

"I supposed one had to begin with him."

The tone becoming still more tragical. Then I arouse myself.

"Do you really want to read history?"

"Yes,"—sadly but firmly.

"Why?"

"Because everybody ought to know something of the past."

"Why?" I persist.

"Well, look at yourself, for instance; your knowledge of history adds so much to your pleasure when you travel, and seems to help you so much in your criticisms of the life and literature of to-day."

"But why do you sigh as if you were a martyr?"

"Because I hate history; it is dull, it is confused; I cannot remember it."

"Do you forget the novels you read last summer, or the people you met at the sea shore?"

"Certainly not; but they are so different. Why, the novels were interesting, and the people were either so charming or so disagreeable, so brilliant or so stupid, that I must be a dunce to forget them."

"Is there no one among all historical people that you care about?"

"Yes, I should like to know about Richard the Lion-Hearted."

"Then, in the name of all that is sensible, why, if you want to find out about Richard of the Lion Heart, do you begin with *Rollin's Ancient History*?"

"I supposed you had to take a course."

And again appears the tone of heroic melancholy, as if "taking a course" was only a little less to be deplored than scaling the enemy's works with the forlorn hope. Now what should I do if I were oppressed with a sense of responsibility towards history, and the only person I cared about within her ranks was he of the Lion Heart? Go to Lingard's endless volumes; to Hallam's *Middle Ages*; Milman's *Latin Christianity*; or any of the ponderous histories of the Crusades? No; I should put my magic lantern in order, hang up my screen, and throw upon it again and again those marvellous pictures from *Ivanhoe*, *The Talisman*, and *The Betrothed*. Through these pictures I should sit beside Richard in palace and chamber, should kneel with him at the high altar, and strike with him on the tented field. I should look into his bright blue eyes, should see his yellow hair floating in the soft southern air; and I dare say for a time should not care where, or in what century, he lived his mortal life. But after I knew Richard as I know my own brothers, I should surely ask who is the lovely woman he alternately caresses and despises? His Queen Berengaria? How came she his queen? Why lingers she here on these blood-stained sands, instead of living at ease in the stately palaces in distant England? Ah! you see I am driven to Agnes Strickland's *Lives of the Queens of England*, without dreaming of them as history at all. Fancy how I should devour every word of her record! Those with whom she spent her days, whom she loved, whom hated, would be to me more than the companions of my own bed and board. And as I note how, after some act of weakness or folly, she crouches terror-stricken before her enraged husband, and read that with all the violence of his race he roughly thrusts her from him, shall I not enquire, what was this man's race that he excuses his savage excesses by saying: "As of old, the Plantagenet is the offspring of a fiend." And the brothers with whom he was always striving, and that Philip, who sent like wildfire through Europe the warning cry: "Look out for yourselves, the devil is loose again," when he escaped from one of his innumerable captivities,—can I rest until I know all that any one knows of them?

And as I find myself in the presence of his parents, that Henry and that Eleanor of bitter memory, and see the latter hunting, like a sleuth-hound, the husband for whom she had sinned so grievously, to the hidden bower of Rosamond, and ever after, in burning revenge, stirring up the fiery hearts of their wretched brood of sons against him; or hear the shrill cries of Becket's murderers disturbing the midnight dreams of shuddering Europe; and, last of all, shrink with horror from the blasphemous curse that Henry flings back upon his God as he writhes upon his frenzied death-bed, must

I not find out what age of this unhappy world could harbor so much human misery? And as Plantagenet, Angevin, Norman, and Saxon cross and recross the confused pages, shall I not be driven to Freeman's *Norman Conquest*, lest my brain should reel in its frenzy of ignorance?

No fear of my stopping now. I shall trace the stream to its source, and even reach "Rollin" in time. I shall not be contented with rapid strides in that direction alone. I shall insist on understanding each particular in the lives of those who sat in Richard's seat, and won his crown after he had laid it by. So you see I should find myself possessed of all historical knowledge through my interest in this daring crusader, whose sword and shield have hung rusted and dull for so many centuries.

I am convinced, for almost all readers, this is the only way to read history with profit. As well eat when you are not hungry, as read when you are not interested; and, unfortunately, the older histories are dull through their formalism and pedantry, and will only be sought by those born with a passion to know how time has been filled up since the flood.

So the way is to take anybody you care for, and plunge in; the wave that bore him on will sweep you into the current of universal knowledge.—*Congregationalist*.

COUNTY COMPETITIVE EXAMINATION OF SCHOOLS.

CLASS V.

ARITHMETIC.

- (1) Define vulgar, decimal, compound, complex, and proper fractions, giving an example of each.
- (2) Find the total cost of papering a room at 8 cts. per square yard, and of the paper at 8 cts. per roll, the room being 12 ft. by 18, the ceiling 10 feet from the floor, and the paper 15 inches wide, and 13 yds. in a roll, no allowance being made for doors or windows.
- (3) Find what fraction 7 ft. 11 in. is of one acre.
- (4) Multiply the sum of $3\frac{3}{4}$, $4\frac{1}{2}$ and $4\frac{1}{4}$ by the difference of $7\frac{1}{2}$ and $5\frac{1}{4}$; and divide the product by the sum of $94\frac{1}{2}$ and $93\frac{1}{2}$.
- (5) Find the value of $\cdot 2775$ of 1 sq. yd. 3 ft. 72 in.
- (6) Find the difference of $17\cdot 428571$ sq. ft. and $100\cdot 8$ sq. in.
- (7) If 4 reapers receive \$11.04 for $9\frac{1}{2}$ days' work, how many men may be hired for $16\frac{1}{2}$ days for \$105.08.
- (8) If I buy \$2500 of Bank Stock at a premium of 8 per cent., immediately sell it out at a premium of $9\frac{1}{2}$ per cent., and invest in 3 per cents. at 106, what interest do I now get on the sum originally invested?
- (9) A man was hired for 50 days at 75 cts. per day, for each day he worked, with the understanding that he was to pay 25 cents per day for each day he was idle. At the end of the time he received \$27.50. How many days did he work?
- (10) Find the length in inches correct to 5 decimal places of one side of a square piece of board that contains exactly half of a square foot.
- (11) Find the proceeds of a note for \$225 due in 3 months, discounted at the Bank at 8 per cent.
Values—9 each for first ten. Last one, 10.
Note—Full work required.

CLASS V.

GRAMMAR.

- (1) Define—conjugation, gender, orthography, syntax, tense.
- (2) Give the plural of—tax, brush, valley, index, flagstaff, brother-in-law, potato, elf, portico.
- (3) Give four nouns, denoting objects either male or female.
- (4) Give the feminine of—lad, male, wizard, czar, tailor, tutor, shepherd, landlord.
- (5) Give the past tense and the present, and the past participle of think, wear, climb, freeze.
- (6) Decline "mouse" and "goose" in both numbers.

- (7) Analyze the following passage, telling the kind and relation of each sentence :

" And what man, seeing this,
And having human feelings, does not blush,
And hang his head, to think himself a man ?
I would not have a slave to till my ground,
To carry me, to fan me while I sleep,
And tremble when I wake, for all the wealth
That sinews bought and sold have ever earned."

- (8) Parse the words in italics.
(9) Correct or justify, giving reasons, the following :
(a) I have just came home.
(b) Will you learn John his lesson ?
(c) Let he and me go to school.
Values—(1) 5, (2) 5, (3) 4, (4) 4, (5) 12, (6) 10, (7) 30, (8) 24, (9) 6.

CLASS IV.

ARITHMETIC.

- (1) Find the greatest common measure of 13260, 3094 and 4420
(2) How many bricks 8 in. long, 4 in. wide, and $2\frac{1}{2}$ in. thick, will be required for a wall 28 ft. long, 15 ft. high, and 28 in. thick ?
(3) Divide 729 yds. 3 qrs. 3 na. 1 in. by 7 yds. 1 qr. 1 na. 1 in.
(4) Reduce $\frac{1}{2}$ of an ounce to the decimal of a pound avoirdupois.
(5) What is the value of—.015625 of a bushel ?
(6) Divide—.003294392 by 7.894 without reducing to fractions.
(7) Find the value of 719680 lbs. of wheat at \$1.40 per bushel, and 73438 lbs. of oats at 32 cts. per bushel.
(8) If $17\frac{3}{4}$ tons of hay last 15 horses $107\frac{1}{2}$ days, how long will $11\frac{1}{4}$ tons last them ?
(9) Find the price of 32a. 1r. 14per. of land at \$120.46 per acre.
(10) Find the interest on \$44.56 for 3 yrs. 5 mos. at $8\frac{1}{2}$ per cent.
(11) Divide 281 acres of land among A, B and C, giving A 25 acres more than B, and B 36 more than C, and find the value of each one's share at \$10.75 per acre.
Values—8 each, except the last, which is 20.
Note—All the work must be put down.

CLASS IV.

GRAMMAR.

- (1) Define conjunction, tense, infinitive mood, complex sentence.
(2) Give the feminine of—hair, lion, emperor, hero ; the plural of court-martial, axis, Mr., and deer.
(3) Compare—old, near, and square.
(4) Analyze the following, naming the kind and relation of each sentence :
" In the radiant islands of the East
Where fragrant spices grow,
A thousand thousand humming-birds
Go glancing to and fro."
(5) Parse all the words except "the," "of," and "a."
(6) Change the following sentences so that passive verbs may be active and active verbs passive :
(a) The captain led his soldiers into battle.
(b) The letter will be written by James.
(c) The dagger was concealed under his cloak by the assassin.
(7) Give the first person singular of each tense of the indicative mood active of the verb walk.
(8) Correct where necessary—
(a) Who shall I give it to ?
(b) After the bell rang.
Values—(1) 8, (2) 8, (3) 10, (4) 18, (5) 30, (6) 9, (7) 8, (8) 8.

CLASS III.

ARITHMETIC.

- (1) Express 1879 in Roman numerals—and eighty millions one hundred thousand and one in figures.
(2) Define minuend, quotient, composite number, prime number, and factor.
(3) Multiply 400018 by 810004.

- (4) Divide 94861 by 24 by *factors*, showing how you got the true remainder. (No value will be given for this example if worked by long division.)

- (5) In 1674432 cubic inches of wood how many cords ?
(6) If there are 5 tons, 3 cwt., 3 qrs., 24 lbs. of hay in a stack, how much would there be in 15 such stacks ?
(7) Find the G. C. M. of 69120 and 103680, and the L. C. M. of 3, 4, 8, 10, 15, 24, 36.
(8) From $982\frac{1}{7}$ take $29\frac{1}{8}$.
Values—(2) 5, each of the others, 10.

CLASS III.

GRAMMAR.

- (1) Define noun, pronoun, verb.
(2) Tell the part of speech of each word in the following :—" We are accustomed to look for our heroes among those who encounter their fellow-men amid the din of battle."
(3) Give the plural of tooth, ox ; the masculine of sister, queen ; the feminine of sir, duke ; the comparative and superlative of ill, and worthless.
(4) Divide the following sentences into noun part and verb part :
" No hive hast thou of hoarded sweets."
" A transient calm the happy scenes bestow."
" Too great a variety of studies dissipates the mind."
Values—(1) 3, (2) 17, (3) 10, (4) 10.

Exchange Department.

In this department questions submitted by teachers will be inserted, that they may be discussed by those who are desirous of either giving or receiving light in regard to them.

1. "An ordinary prosperous Englishman" implies that prosperous Englishmen are common, and that the person referred to is one of them. But if the meaning be that this particular Englishman is as prosperous as the generality of his countrymen, then, of course, "ordinary" should be changed to "ordinarily," unless the whole expression be altered.

2. "To the middle of the 16th century" is not a "sentence." If the preceding words were given, it would be easier to answer the inquiry. But it is generally better to use "till" than "to" before words indicating the time at which something terminates.

3. "Previous to," meaning the same as "before," is good English. If, however, it offends the critical ear to use an adjective, or a word that looks like an adjective, after "is formed," then the preposition "before" may be used.

4. There is a misconception here. We should read according to the sense, not simply according to punctuation. Punctuation marks, when properly used, aid us, of course, in discovering the construction of sentences and in discerning the writer's meaning. The querist (M.D.) evidently has not clear notions as to rising and falling inflections. Many persons (even teachers) who read well, have not learned to distinguish these. "Raise your voice" commonly means "speak louder," or "speak in a higher key ;" and "lower your voice" means the reverse. But a *rising inflection* is an upward slide, through several tones of the scale on a single word ; and a *falling inflection* is a downward slide, beginning several tones higher than the level of the preceding words, and descending a little below that level. Without attempting just now to give rules for the use of these slides, I may say that such exclamations as those in the passage quoted commonly require the *falling inflection*—not the rising, as M. D. seems to think.

5. "The whole," "what time," "during the time when," or else "the while," "while" (adverbial conjunction) : I prefer the former. But teachers should bear in mind that it is sometimes impossible and unnecessary to parse the words of an idiomatic phrase.

H. C. C.

To the Editor of the Canada School Journal.

SIR,—We see in the JOURNAL occasional communications from the author of the grammar in use in our schools. With this proof that our author is no mythical or anonymous personage, I make bold, with your permission, to ask a few questions, which I hope he will answer if they seem of sufficient importance.

1. In what way are we to understand the assertion that an adverb or adverbial phrase is never a complement of a verb of incomplete predication? What is the difference in the structure of the following sentences: "The man is rich," and "The man is here?" If in the second the verb is a verb of existence, and is equivalent to "the man exists here," then why not "the man exists rich?"

2. If an adverb may modify a noun when the latter is in the attributive or predicative relation, why not likewise when it is the subject of a sentence? What different function has "only" in "he buys wheat only," and "wheat only is bought?"

3. The word "complement" seems used especially to mark something distinct from the object of transitive verbs. How are we to understand "the infinitive complement making the object of a verb of incomplete predication?" In "can," or "ken," "know," or "ought," "owns" or "owes," we can easily see that the verb is transitive, though one is followed by "to" and the other is not, which probably does not affect the case. But how can we make "may" or "must" a transitive verb? And if by derivation, or old use, these words are all transitive, what need of the word "complement?"

4. How are we to express the different uses of "will?" "The tree will soon fall" (future tense, of course), "I will not consent" (simple determination), "He willed the death," &c. (regular, or weak, and transitive). Now, what are we to say? different parts of same word? or different words? What constitutes a word? Are we to go ahead and parse a word as we find it used, regardless of form or derivation? In preface to our Grammar we are charged to observe the functions of words, as "nothing is more hurtful than mechanical directions." Elsewhere (page 217 Exercises) we read, "In analysis and parsing, grammatical form is the essential thing." Italics are, presumably, the author's.

"In 'I can but lament the result,' but is a preposition, and in all such constructions there is an improper omission of a negative." What shall we do with this from Comus, "If I but wave this wand?" A score of such constructions could be quoted in a very few pages of Shakespeare.

"He hadn't ought to do it" is grammatical, though vulgar." In what sense are we to understand the word grammatical?

"All true adjectives can be used both ways," i. e. attributively and predicatively; in another place we are told we "can make nothing of 'afraid' but an adjective." Can we say "an afraid man?" And in "the man is asleep," and "the ship is ashore," how shall we parse, and what reason shall we give for our work?

DISCIPULUS.

Notes and News.

ONTARIO.

Mr. H. M. Clark, a teacher from the County of Bruce, Ont., has just graduated from the Philadelphia School of Elocution and Oratory with first-class honors.

We are glad to note that the Ontario Art School is to receive a grant of \$4,500 this year from the Government.

The attendance at the Toronto Public Schools is 9386.

There are 1442 pupils in the Brantford Schools.

The registered attendance in Guelph High School is 158.

Stratford Public Schools have 1143 pupils in attendance. The High School has 180 on the roll.

The Peterborough Schools have 1126 pupils in attendance.

London Collegiate Institute has an attendance of 143 boys and 142 girls.

The sum of \$125 was granted by the Stratford Board of Trustees to Mr. Dickenson for extra services in conducting the Model School in 1879.

Brantford School Board has adopted the following resolutions respecting promotion examinations: (1) That the examination do not take place in the presence of the teacher of the division being examined. (2) That the standard for promotion be 50 per cent. (3) That the reports as to the results of the examination be made by the Principal. (4) That the marks for writ-

ing be not taken into consideration in estimating the marks required for promotion.

The examinations in the several military districts for admission into the Royal Military College will, in future, be held annually in July, instead of semi-annually.

For thirty years three clergymen have presided over the Perth School Board.

Literary Societies have recently been organized in connection with Newcastle and Toronto High Schools.

The Port Hope Times speaks thus of the schools in that town: "It is extremely gratifying to be able to record that the schools of Port Hope, since Mr. Goggin became head-master, have become thorough institutions of learning. His capacity for organization is very great, and he has consequently succeeded in carrying out an excellent system of grading. Every teacher knows just what is expected from him or her, and the work goes on simultaneously and well. Mr. Goggin deserves praise for his work, and is to be congratulated on the fact that the teachers under him recognise his fitness for the position."

Mr. Somerset, Public School Inspector, addresses the following suggestions to teachers, trustees, and parents in his Annual Report:

Teachers.—The marked improvement visible in the spelling and writing in the majority of schools is a cause of great encouragement. Most teachers now realize the importance of strict personal attention to the writing of each child—even the smallest; also the usefulness of the writing exercise in employing the small scholars, and of making the study of other subjects easy.

The geography papers suggest greater attention to the spelling of geographical names; the avoidance of keeping the pupils—small classes especially, too long at the map of one particular continent or country; the desirability of giving interesting facts concerning the people and productions of a country, in addition to dry lists of names.

The arithmetic papers suggest greater attention to neatness and system in the working of questions. This remark will also apply to the papers on the other subjects. The means of effecting this is by giving occasional written examinations. The examination of the pupil's papers show quite clearly which schools have been in the habit of employing this exercise.

Trustees.—I can only repeat a suggestion made last year: Give greater attention to the small repairs and to the cleansing of your school-houses. Your children are there seven hours each day, and it is surely no great tax on the time of three trustees to see that their surroundings are clean and comfortable during that time. See that public examinations are held at least every half year; if the teacher seems slack about it, show him that you expect it to be done. These examinations enliven and stimulate schools that hold them.

Parents.—So much has been said about irregularity of attendance that it may be assumed that parents are now fully aware of its evil influence on the progress of our schools. It only remains for each one to endeavor to remove or reduce its extent by practising the greatest possible regularity in the attendance of his children. Any parent complaining of the slow progress his children make is placed entirely in the wrong, if the teacher is able to show, in reply, an attendance of broken periods of a few days each.

The timely provision of the necessary books, slates, pencils, &c., for the children is also a matter requiring greater attention from some parents. Its absence frequently causes great embarrassment and delay in the work of the class, as well as the individual scholar.

The use of monthly reports of the conduct and progress of each child is now being generally adopted. Their success depends entirely upon the interest parents take in them, and it is therefore hoped there will be a hearty response from them when the teacher invites their co-operation in this matter.

NOVA SCOTIA.

Since last month's notes were written, the untimely death, at the early age of 43, of James De Mille, A.M., Professor of Rhetoric in Dalhousie College, has called forth numerous expressions of sincere regret. Professor De Mille's works of fiction and humor, "Helena's Household," "The Cord and Crease," "The Dodge Club," etc., are well known, and stamp him as an author combining originality of conception with power of expression. The vacancy caused by his death in Provincial educational circles cannot easily be filled. His recently published treatise on "Rhetoric," already adopted as a text-book in many leading institutions, shows how admirable were his qualifications for his special professorship. As a lecturer he was remarkably lucid, and enchaind the attention of his classes.

He had filled the post of Examiner in English Literature in the Halifax University from the foundation of that Institution. Though working in another sphere, Professor De Mille was in lively sympathy with the cause of Common Schools.

An omission of the number of pupil teachers at the Normal School who are working for *first class licenses*, occurred (the *notator* assumes through a lapse of the printer) in the brief paragraph of last month's notes referring to the Normal School. The number sent us, we believe, was about 20.

During the month of February, the Superintendent of Education visited the Normal School at Truro, the Pictou Academy, and the High School and County Academy at Guysboro'. He also spent some time at Antigonish, where he was invited to visit the classes of St. Francis Xavier's College, an Institution affiliated with the Halifax University.

R. J. J. Emerson, Esq., A.B., of Dalhousie, has been appointed Principal of Guysboro' Academy.

F. G. Harrington, grade A, 1879, has assumed charge of the Liverpool Academy. The principalship of this Institution was resigned by T. R. Patillo, Esq., A.M., on his appointment to the inspectorship of Division No. 2 (Counties of Lunenburg and Queens).

From the accidental substitution in last month's "Official Department" of "Minister" for "Superintendent," the Windsor Mail infers an intention on the part of the Government to create a Departmental Bureau of Education, as in Ontario. This is not, we believe, a case in which "coming events cast their shadows before."

NEW BRUNSWICK.

The Lieut.-Governor being a member of the Board of Education, the death of the late Governor, Hon. E. B. Chandler, and the appointment of Hon. Senator Wilnot as his successor, has made an important change in the *personnel* of that body.

Hon. Judge Stevens, of the County Court, has been appointed Chairman of the Board of School Trustees of the town of St. Stephens; and Wm. T. Rose, Esq., has been appointed a member of the Board. These appointments are made by the Government.

The Truro Council some time since chose R. Wilson, Esq., to be a Trustee of Schools, in place of H. Graham, Esq., resigned.

P. McPeake, Esq., was appointed by the City Council of Fredericton to be a member of the Board of School Trustees, in place of P. Dever, Esq., resigned.

The Chief Superintendent delivered an educational lecture at Nashwaaksis, Parish of Douglas, on the 12th February, in the course of which the character and objects of the recent changes in relation to inspection and the course of instruction were pretty fully discussed.

Very much good may, and no doubt will, be accomplished by the Inspectors in the way of correcting misapprehension, and removing difficulties that arise from the fact that many people take a partial and one-sided view of the situation. We are informed that "Ingram B. Oakes, A.B., Inspector of District No. 5, and D. P. Wetmore, Esq., Inspector of District No. 4, are very successfully awakening a deeper interest in education and a sympathy with the 'new departure,' by delivering public addresses on their tours of visitation."

A complete list of the schools in which the Governor-General's medals are offered for competition has not yet been obtained. The usefulness of these prizes must depend very much upon the basis of award. This, no doubt, is determined in all cases by the authorities of the several institutions, subject to His Excellency's approval. If the offer of a prize merely stimulates a few students or pupils to strenuous exertions in one particular direction, as for example in the preparation of an essay on a specific subject, the benefit conferred is hardly commensurate with the outlay.

In the Provincial Normal School, the silver medal is to be given at the close of each session to the student-teacher having the highest "professional standing." This depends mainly upon the estimates of professional knowledge and professional skill, but also takes into account the general scholarship, deportment, punctuality and regularity of attendance.

In the Model School (highest department) the pupil having the highest school standing for the term will receive the medal. This is as far removed as possible from a premium on specialties, since it includes progress in studies, diligence, good conduct, punctuality and regular attendance.

On the 12th and 13th of February, the Westmorland County Teachers' Institute met at Dorchester, with Mr. J. G. McCurdy, the retiring President, in the chair. For some reason unknown,

the Inspector, Mr. Geo. Smith, A.B., was not present; but he was nevertheless elected President for the ensuing year. Mr. A. J. Denton, A.B., of Shediac, was chosen Vice-President; Miss L. A. Seamon, Secretary-Treasurer; Miss Maggie Harris and Mr. C. E. Lund, additional members of Committee.

The present session of the Provincial Normal School will close on Friday, the 12th March, when there will be the usual exercises.

The March Examination of candidates for license will take place at Fredericton, beginning on Tuesday, the 16th.

QUEBEC.

A special meeting of the Protestant Committee of the Council of Public Instruction for the Province of Quebec took place in the Education Office on the 4th Feb. Those present, after having heard the letters of apology read, resolved themselves into a sub-committee for the conduct of business, and left their acts to be confirmed by the next quarterly meeting. The following is a summary of the business transacted.

(a) A new form of returns for inspectors of academies and model schools, prepared by the secretary on the plan suggested by the Lord Bishop of Quebec, was recommended for adoption, as was also a uniform set of text-books.

(b) Every pupil before being enrolled as an academy or model school student must pass a satisfactory examination in reading and spelling by dictation, including 4th Reader; in writing; in arithmetic, to the end of vulgar fractions; and in geography and grammar. The examination to be conducted by the principal of the school.

(c) None but certificated teachers or those holding legal diplomas shall be allowed to teach in an academy or model school.

(d) Inspectors must have completed the inspection of all the schools and academies by the 24th of March.

(e) When a district shall raise \$80 in addition to its share of school monies, and when in the school in that district model school subjects shall be taught, the commissioners may report such school as a model school.

(f) The Rev. F. I. B. Allnutt, D.D., of Drummondville, was appointed inspector of academies and model schools.

(g) Inspectors are to recommend the principals of academies and model schools to adopt the course of studies in harmony with the universities.

(h) The amended form for teachers' diplomas, drawn up by Dr. Cornish, was handed to the Hon. the Superintendent to report thereon.

The quarterly meeting of the Protestant Committee took place in the Education Office, Quebec, on the 25th of Feb. Present.—Dr. Dawson, R. W. Heneker, Esq., Hon. L. R. Church, Dr. Cook, Hon. W. W. Lynch, and the Hon. G. Oumet, Superintendent of Public Instruction. Dr. Cook presided. The sub-committee on inspection was instructed to examine the reports of inspectors of academies and model schools, and to report on the distribution of the education fund before the August meeting. With reference to normal school fees and balances unappropriated of the grants for common schools, it was resolved that all such sums and monies shall remain at the credit and disposal of the committee, and that the committee shall render an account of the expenditure of the same to the Hon. the Superintendent for the information of the Legislature. An interesting conference was held between the Protestant and Catholic sections of the Education Committees of the Province of Quebec on the subject of the proposed consolidation of the education laws. The bill is to be printed in English. The different classes of the population and their separation are more fully defined in it; and the Protestant committee wishes to consider carefully how the new bill will bear on the education of Protestants. Definitions are given in the new bill of the terms Roman Catholics, Protestants, mixed and common schools. Arrangements for official supervision and inspection, and classification of different grades of schools, are also attended to. Both sub-committees agreed that it was desirable that graduates in arts should have privileges not at present enjoyed with reference to professional examinations; and also that improved methods of inspection should be adopted. The secretary submitted the accounts of the Contingent Fund, showing a balance of \$585.44 in the Bank of Montreal. The committee was of opinion that the claims of Dr. Miles should be promptly settled by the Government. The Superintendent informed the committee that it was his desire to exhibit the scholastic system of the Province of Quebec at the Provincial Exhibition to be held in Montreal in September next, to which the sanction of the committee was most cordially given. Mr. James

Mitchell, rector of the high school, Quebec, was appointed a member of the committee for preparing examination papers for teachers' diplomas. The committee adjourned till Wednesday, 26th May.

GEORGE WEIR, Secretary.

MANITOBA.

The annual school meetings have nearly all taken place, on the date specified in the statute, viz., on the first Monday in February; and wherever there were two parties, there has been the usual struggle, followed, in many cases, by letters from both parties to the Superintendent.

The elections in Winnipeg resulted in the return of Messrs. Belch, Stewart, and Mulvey, old members of the Trustee Board, and Messrs. Markham and Rowe.

Messrs. Belch and Stewart have been re-elected Chairman and Secretary-Treasurer.

Emerson, having quite recently been incorporated as a town, has had its limits as a school district re-adjusted, to correspond with the limits of the corporation, and is now taking advantage of the special clauses in the school law which relate to cities and towns. Having three wards, it is entitled to a Board consisting of nine Trustees. The annual meeting resulted in the election of the following, viz.:—North ward—Messrs. F. Lane, J. W. Whitman, and F. E. Burnham. South ward—Messrs. Chalmers, Armstrong, and Jas. Guthrie. West ward—Messrs. Bradley, Fairbanks, and W. McKechnie.

The meeting adopted a resolution recommending the Trustees to raise \$5,000 by debentures for the erection of a new school-house.

The Rev. L. O. Armstrong has been elected chairman, and W. McKechnie Secretary-Treasurer. Mr. T. S. Menary has been re-engaged as teacher.

The number of teachers in the Winnipeg Public Schools has been increased. The following is the staff for the current year.—J. B. Ferguson, Principal; P. C. McIntyre, A. H. McIntyre, Mrs. Chisholm, Miss Shore, Miss Wright, Miss McLroy, Miss S. Harvey, Miss Eyres, and Miss McEwen.

Arrangements are being made to hire an assistant teacher at Portage la Prairie. The present teacher is J. C. Ferguson.

It is likely that a new school house will be built in Selkirk during the summer. Miss Eliza Spencer, who is teacher there, is winning golden opinions from all parties for the very marked progress which her pupils have made during the past year.

There was a large number of candidates at the recent examination of teachers. The Board of Education have, just now, an unusually large number of petitions asking for the creation of school districts in townships hitherto not included in any district. Undoubtedly there will be a large increase in the number of public schools during the year.

Readings and Recitations.

A LESSON.

A little elbow leans upon your knee—
Your tired knee that has so much to bear—
A child's dear eyes are looking lovingly
From underneath a thatch of tangled hair.
Perhaps you do not heed the velvet touch
Of warm, moist fingers holding yours so tight;
You do not prize the blessings overmuch—
You almost are too tired to pray to-night.

But it is blessedness! A year ago
I did not see it as I do to-day—
We are all so dull and thankless, and too slow
To catch the sunshine till it slips away.
And now it seems surpassing strange to me
That while I wore the badge of motherhood
I did not kiss more oft and tenderly
The little child that brought me only good.

And if, some night, when you sit down to rest,
You miss the elbow on your tired knee—
This restless curly head from off your breast,
This lisping tongue that chatters constantly;
If from your own the dimpled hands had slipped,
And ne'er would nestle in your palm again,
If the white feet into the grave had tripped—
I could not blame you for your heartache then.

I wonder that some mothers ever fret
Their little children clinging to their gown;
Or that the footprints, when the days are wet,
Are ever black enough to make them frown;
If I could find a little muddy boot,
Or cap, or jacket, on my chamber floor—
If I could kiss a rosy, restless foot
And hear it patter in my house once more;

If I could mend a broken cart to-day,
To-morrow make a kite to reach the sky,
There is no woman in God's world could say
She was more blissfully content than I!
But ah! the dainty pillow next my own
Is never rumpled by a shining head!
My singing birdling from its nest has flown—
The little boy I used to kiss—is dead.

Teachers' Associations.

The publishers of the JOURNAL will be obliged to Inspectors and Secretaries of Teachers' Associations if they will send for publication programmes of meetings to be held, and brief accounts of meetings held.

HALTON.—Halton County Teachers' Association will hold its regular half-yearly meeting at Milton, in the head master's room, on Thursday, Friday and Saturday, 11th, 12th and 13th of March, 1880. PROGRAMME.—Thursday, March 11th, forenoon session, 10.30 a.m.—Opening, reading minutes; appointing committees; reports of Committees. Afternoon session, 1.30 p.m.—Composition to Junior Classes, Mr. R. E. Harrison, S. S. S. Nelson; Writing, N. Burns, B.A., Principal of Georgetown Academy; School Hygiene, by Dr. Freeman, of Milton. Evening session, 7.30 p.m.—Lecture in the Town Hall, by J. A. McLellan, M.A., LL.D., H. S. L., subject, "National Education." Friday, March 12th, forenoon session—Opening, calling the roll; Grammar, Mr. A. J. Moore, Georgetown; Algebra, Dr. McLellan. Afternoon session, 1.30 p.m.—Reading, Dr. McLellan; Arithmetic, Mr. Thos. Moore, Acton; Literature, Dr. McLellan. Evening meeting to be arranged for at the Convention. Saturday morning, March 13, 9 a.m.—Opening, calling the roll; Librarian's Report; Question Drawer; Election of officers. R. COATES, Secretary.

NORTH WELLINGTON.—The semi-annual meeting will be held in the Central School, Mount Forest, on Thursday and Friday, March 11th and 12th, 1880. PROGRAMME.—1. Appointment of Committees; 2. Question Drawer opened; 3. How to teach lesson on page 223 of Fourth Book—H. Bailey, head master Mount Forest public school; Critics, Messrs. Denton, Black and Varcoe. 4. Object Lesson with class, and essay on Object Teaching, Miss R. Mitchell, Mount Forest public school; Critics, Messrs. R. Hamilton, Froure and Copland. 5. Reading with Third Class, Miss Burnie, Mount Forest P. S., Critics, Messrs. Reid, Craig and Ironside. 6. Second Class Arithmetic, Miss Minnie Mear, Mount Forest P. S.; Critics, Messrs. Delahunt, Colbeck and Anderson. 7. Teaching, First Tablet with class, Mrs. Jelly, Mount Forest P. S., Critics, Messrs. Clapp, Shields and A. McPherson. 8. Roll Call. 9. Song, Miss Nellie Watson. 10. Question Drawer closed, J. A. McLellan, LL.D. 11. Election of officers. 12. Written Examinations. W. F. McKechnie, Riverstown P. S., Critics, Messrs. Dickie, Corbett and Jordan. 13. Promotion Examination, by Convention. 14. Physical Education. G. B. Bingham, H. M. Harrison P. S.; Critics, Messrs. Harper, Harvey and P. McEachern. 15. Use and Abuse of Text Books, Alex. Dickie, teacher No. 4 Marybo. 16. Parsing, and Analysis of page 106 of Fourth Book, Jos. Reid, B.A., H. M. Mount Forest High School; Critics, Dr. McLellan, and Messrs O'Connor and Smith. 17. Analysis of Gray's Elegy, by Convention. Page 356 Fourth Book, Jos. Reid, B.A., Mount Forest High School. 18. Some change in School Law, John H. Burk, Teacher S. S. No. 11, Mint; Critics, Convention. 19. Township Boards, Malcolm Cameron; Critics, Messrs. A. Davidson, Perry and Ogden. 20. How to Teach Reading, Dr. McLellan. 21. How to Teach Arithmetic, Dr. McLellan. 22. Algebra, Dr. McLellan. 23. Natural Philosophy, Wm. O'Connor, M.A., H. M. Harrison High School; Critics, Messrs. Craig, Bingham and Campbell. D. P. CLAPP, B.A., President.

NORTH HASTINGS.—The quarterly meeting of this Association was held at Stirling, January 31st, 1880. The forenoon session was occupied in the discussion of School Drill and how to teach Arithmetic to Junior Classes, introduced by Wm. Mackintosh, Esq., I. P. S. The subject was most ably and exhaustively handled by Mr. Mackintosh. In a simple, lucid and practical manner, he showed how to teach children to recognize numbers at sight; to compare numbers; to analyze them, and to perform the simple elementary operations of addition and subtraction. An especially noticeable feature was his showing how to teach the principles of carrying. The Association adjourned. A pleasant feature in connection with the meeting was the recognition of the public services of the teachers by several members of the Stirling School Board, who had made arrangements with a leading hotel-keeper to have the teachers dine together as their guests. The courtesy was duly appreciated and acknowledged by the large gathering that enjoyed their hospitality. The Association met again at 3 p.m. The treasurer's report was then read, showing the large balance of \$81.81 on hand and in the bank. The auditors, Messrs. Mulloy and Shannon, examined the accounts and reported them correct. Mr. J. Johnston, Inspector P. S., South Hastings, then introduced "How to teach Reading to Second and Third Classes." The subject was ably handled, stress being laid upon the necessity of thorough explanation of the lessons when they are assigned, the importance of teachers being able to set a good model for imitation before their

pupils, and the value of committing the gems of thought studied in connection with the reading exercises to memory. Mr. Mulloy and Mr. Sutherland favored the Association with readings, which were well rendered and received. Association adjourned.

GEO. KIRK, *Secretary*

WM. MACKINTOSH, *President*.

Official Department.

AN ACT RESPECTING CERTAIN AMENDMENTS TO THE PUBLIC SCHOOLS ACT.

Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1. The fourteenth section of the Revised Statute respecting Public Schools is hereby amended, by adding thereto the following:—"But in the case of Public Schools in rural School Sections, or of townships, the trustees thereof may open the schools therein on the third day of August in any year after the present year, so that the term may begin in such school or schools on that day instead of the eighteenth day of August, and end on the twenty-third day of December following, but such additional period during which the school may be open shall not be considered in any appropriation of the legislative or municipal grants."

2. The fourth sub-section of section one hundred and sixty of the Public Schools Act is hereby re-enacted, and the following shall be added thereto and form part of the same:—"Provided the school rate paid by such person upon the said property is at least equal to the average school rate paid by the residents of such section or division; and the fees to be imposed upon other non-resident pupils whose parents or guardians do not pay an average school rate in the section or division shall not exceed the sum of fifty cents for each pupil for every calendar month."

3. In the case of every union school section or school division comprised of the whole or parts of two or more municipalities, the union school section or school division, as the case may be, shall be held for the purpose of inspection, the borrowing of money and the issuing of debentures, and for all school purposes, except as hereinafter mentioned, as within the township, town, or village municipality in which the school house is situated, and if there are two or more school houses, then in the municipality with the largest amount of assessed property; and the school rates of such union or school division shall henceforth be collected by the respective collectors of the township, town, or village municipality in which each part of the union or school division is respectively situate, and the taxes shall be so levied and collected in each part of such union or school division for its proportionate amount of the trustees' yearly requisition made to the clerk of the municipality in which the union or school division is deemed to be situate, upon an equalized basis of assessment, and if such equalized basis is not mutually agreed upon on or before the first day of August between the councils of the respective municipalities, this shall be determined by reference to the inspector or inspectors having jurisdiction in the respective municipalities concerned, and other competent persons, one to be chosen by the council of each municipality, and not being a member of such council, and the determination by such referees, or the majority of them, shall be final and conclusive in the premises, and in cases where the number so appointed would be even, then the senior county judge shall be added thereto, and in case of default by any council in appointing a referee on its behalf, on or before the first day of August, a majority of the other referees shall be competent to make such determination. The referees shall be paid the like remuneration as township councillors, as also their travelling expenses, by the trustees of the union or school division, out of the school monies thereof.

(2) Every such equalization shall continue in force for the period of five years, unless any council should before the first day of August in any year require another reference to be held for this purpose; and the clerk of the municipality in which the union or school division is deemed to be situate, shall forthwith certify to the clerks of the several municipalities concerned, the respective amounts which each of them, according to this equalization, are required to place upon the collector's roll of his municipality; and the amounts payable by the several ratepayers in each part of the union shall be such as with an equal rate levied upon all parts of the union shall be sufficient to meet the yearly requisition of the trustees upon the municipalities in which the union or school division is deemed to be situate; and such amounts as and when collected shall be paid by the respective collectors to the treasurer of the municipality in which the union or school division is deemed to be situate.

4. It shall be the duty of every township council to cause the assessor of the township in preparing the annual assessment roll of the township to set down therein, in a separate column, the number of children between the ages of five and sixteen years, opposite the name of each person on the assessment roll who are resident within, and the clerk of the

township shall, on or before the first day of July in each year, furnish the Secretary-Treasurer of each school section in the township with a statement of the total number of such children within that section, and shall also furnish the Public School Inspector with a statement of the total number in the township, and any expenses attending the assessment, collection, or payment of school rates by the municipal council or any of its officers for the trustees entitled thereto, shall be payable by the municipality, and the said rates, as and when collected, shall within a reasonable time thereafter, and not later than the twentieth day of December in each year, be paid over to the trustees, without any deduction whatever; and the clerk of each township council shall also, upon request and free of any charge, furnish the Public School Inspector with a true copy of the assessed value of each school section as shown in the revised assessment roll for that year, and also of the several requisitions of the trustees for school monies. The township clerk shall be entitled to reasonable payment from the township council for the above mentioned services. The provisions of this section shall also apply to cities, towns, and villages, and the municipal councils and officers thereof, so far as consistent with any other provisions affecting the same, and shall also apply to Separate School Boards or trustees who may exercise their option of having their school rates collected by the municipal councils and the officers thereof.

5. The trustees of every rural school section and the Public School Board of every town, village or township, shall keep, or cause to be kept, books of account of all school monies of their section, town, village or township (as the case may be), according to such form as may be prescribed by the Minister of Education.

6. It is hereby declared that the provisions contained in section twenty-nine of the Act forty-two Victoria, chapter thirty-four, shall be construed not to apply to school furniture or appliances, ordinary repairs, fencing, sheds, offices, or the like objects.

7. In cases of school divisions within section eighty-three of the Public Schools Act, it shall be competent for the council of the township in which any part of such school division is situate, to withdraw the same or any portion thereof from such school division and to annex the same to another school section in the same township, or to form a new section thereof by by-law to be passed before the first day of October in any year, and to take effect on the first day of January next following; and in case of any disagreement as to the terms of such withdrawal, the same shall be determined in the manner provided by law with respect to the alteration or dissolution of union school sections.

8. In all cases of the formation, alteration or dissolution of school sections within the same township, or of township boards, or of union school sections comprised of the whole or parts of two or more townships, or of school divisions comprised of a town or village, and the whole or parts of one or more townships and by-laws to be passed for any of such purposes shall become absolutely legal and valid, and the jurisdiction of any court to question the same shall be deemed to be ousted when such by-law has been submitted to and confirmed by the Minister of Education, who shall require notice to be given of such application by the parties applying by advertisement or otherwise as he may direct, and the certificate of the Minister of Education endorsed on a certified copy of such by-law shall be conclusive evidence of such confirmation, and the provisions of this section may be taken advantage of for the confirmation of any by-law for any of such purposes heretofore passed and not quashed or otherwise declared invalid, and this section shall be deemed to apply to any such by-law.

9. The one hundred and fortieth section of the Public Schools Act, shall hereafter be construed not to authorize such alteration by the council of either municipality as would add any further portions of the municipality to such union school section; and provisions of section one hundred and fifty of the Public Schools Act shall apply to any case of a dissolution of a union section for any cause whatever.

10. The one hundred and forty-second section of the Public Schools Act is hereby amended so that it shall be necessary that any portion of the township forming a union, or being part of a school division with another municipality or portion thereof, shall be considered as a section in respect of the said requisite number of two-thirds of the school sections of the township.

11. The provisions of any other act or of any special act relating to union school sections or divisions inconsistent with this act are hereby repealed.

12. In any matter or inquiry which the Minister is by law authorized to institute, make or direct, he may, upon application (without notice) to any of the superior courts, or a judge thereof, obtain an order for the issue of a writ or writs of subpoena *ad testificandum*, and also *duces tecum*, to be directed to such person or persons for him or them to attend and give evidence under oath, at such times and places, and before such person or persons as the Minister shall appoint, and any default of any such person in obeying any such subpoena shall be punishable as in the like case in any action or cause in any of the said courts.

13. This act may be cited as "The Public Schools Amendments Act, 1880."