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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.

THE MEDICAL ASSOCIATION ON CRAMMING.

The Dominion Medical Association had quite a lively discussion on the impropriety of forcing the brains of young children to perform too much and too exhaustive work. The address of Dr. Grant, who opened the discussion, will be found in another column of the JOURNAL. It is well that the medical profession should speak freely and clearly on the matter. It is to be regretted, however, that its members should assume that the teaching profession are in opposition to them in their good work. This is not the case. The teachers were the first to propose a remedy for the evil of giving children abstract work, and long hours before the age of seven years. The teachers in all parts of the world long ago reached the grumbling stage in which the doctors in Europe and America now find themselves, and thoughtful men and women have for years been planning and carrying into execution numerous methods for accomplishing what Dr. Grant so properly demands; viz., "that up till the age of seven the school work of the child should assume the form of play." The statement of Dr. Grant that "new subjects are added to the programme of studies year by year," is not correct. The work has been reduced during the past 3 years.

Dr. Grant was on solid ground when he attributed the evil effects of school life to badly lighted and ventilated school houses. The whole system, physical and mental, is debilitated more by these causes than by the "cramming," which exists very often in the imagination of ardent writers and speakers. There are pupils who cram, but for every one who crams because of pressure brought by the teacher, there are ten who cram on account of the ambition of their parents or themselves, or as the result of badly balanced mental and physical constitutions. Let the Kindergarten precede and leaven the primary public school, let the school house be well lighted and ventilated, and let the pupils have plenty of physical exercise in the playground and in the school-room, and the evils of cramming will

disappear. There is not much danger of over-working the brain of either a boy or girl who is physically capable of enjoying fun. It is a matter of profound thankfulness that a strong healthy boy or girl is capable of resisting both school and parental inducements to over-work.

In connection with Dr. Grant's excellent article, it would be well to read the extracts given in the present number from Dr. Richardson's very able work, "Learning and Health," and in past numbers from eminent German and English writers.

EDUCATIONAL ACTIVITY IN THE MARITIME PROVINCES

The meetings during the month of July of the Provincial Educational Association of Nova Scotia, and of the Educational Institute of the Province of New Brunswick, the former at Truro, the latter at Fredericton, seem to have been occasions of great interest. These bodies are established on substantially the same principles, both having organic connection with the Central Council of Instruction or Board of Education. The New Brunswick Institute has existed for several years as the apex of a system of County Institutes, and under the skilful management of Mr. Rand, has done much, towards both the development and the consolidation of the educational interests of that Province. Revised arrangements for the inspection and classification of schools, recently brought into force throughout the Province, excited some discussion at the meeting just held. In New Brunswick and Nova Scotia, the contributions of the Provincial Treasury, for the support of public education, are paid directly to the teachers according to class, and not, as in Ontario, to the municipalities or counties for distribution. One effect of the new regulations, as we understand them, is to make the teachers' grants in part dependent on the award of the Inspector, who classifies the schools of his district on the basis of a prescribed "Course of Instruction," and in accordance with conditions established and defined by the Board of Education. The chief point taken against this system appears to have been, that under its practical working, teachers, altogether independently of their industry and skill, may possibly gain or lose in both pocket and reputation by adventitious circumstances. We have not that knowledge of the schools of New Brunswick which would justify us in pronouncing an opinion as to the value of this criticism. We are free to say, however, that the fact of the recently introduced system receiving the energetic advocacy of so practical and experienced an educationist as Dr. Rand, gives us an *a priori* impression in its favor.

The Association convened at Truro, takes the place, we believe, of a voluntary organization, constituted on somewhat elastic principles. Dr. Allison was able to draw together, not

only a large number of teachers and of his own officials, but several distinguished men working in the higher fields of education. That a Province with so creditable an educational record as Nova Scotia, should yet be without a definitely prescribed course of public instruction is somewhat surprising. We are glad to observe that steps of a practical kind are being taken to supply this defect. The professional exercises, both at Truro and Fredericton, were evidently of a very high order.

—We have received from some of the Head-Masters of High Schools in the Province returns of the candidates from their several schools who passed at the recent Intermediate examination. A glance will show that this return is by no means complete, for many of the Masters have not as yet sent us the needful information. The return is also imperfect, for it does not indicate in every instance, as it should do, whether the pupils from each High School were prepared in it, or whether the number included all who attended the examination from the county in which the High School is situated. Also it may have happened that in some cases pupils educated and prepared at a certain High School, but belonging to the adjacent county, may be included in the numbers of the High School of the latter instead of the former. There are many other considerations, such as appeals, &c., which may be taken into account, and thus the record we have given so far is not to be accepted as the correct result. It is well, however, to have it even as it is—an approximation—as it will give a general idea of how matters stand in each school. It is obvious that comparisons cannot be drawn of the merits of particular schools, for in very few instances have the total number of candidates sent up been returned to us; and this is well, because it was not for the purpose of affording an opportunity to the public to make these comparisons that we desired the information, for an injustice would be done to many good, hard-working schools by such a course; but simply as a matter of intelligence which would be of general interest to our readers. We regret that want of space prevents our giving the names of the successful candidates.

—It is sometimes astounding to note how unfairly teachers are dealt with by the "outside world," and how often those who are most loud in denouncing them for not taking a certain course are the most severe in condemning them if they adopt it. *The Schoolmaster* gives an instance in point:

The members of the Petty Sessions at Teignmouth, in giving judgment in a recent case, declared through the mouth of their chairman that "children of all ages, boys as well as girls, were very troublesome, and that they constantly required a flogging; in fact, more flogging than they ever got." Although the bench of magistrates were thus convinced that corporal punishment was a necessity and a thing more honoured in the breach than in the observance, they fined a schoolmistress half-a-crown and costs for doing the very thing which they declare to be so necessary. A pupil had been "stubborn and refused either to say her lesson or to speak," and the mistress had used the magisterial remedy. Evidence was given that the mistress had been a teacher for sixteen years, that no complaint had ever been made against her, and that her treatment of children was marked by uniform kindness. Nevertheless, because she endeavored to subdue the stubbornness of the pupil and adopted the plan which the magis-

trates themselves declared to be indispensable, she was subjected to the humiliation of a fine. In the case of a cross-summons against the mother, it was shown that the house of the mistress had been besieged by a host of angry matrons and excited youngsters. The mother had violently abused her and ineffectually endeavored to scratch her face. Other women had incited the mother to violence against the teacher, with the advice to "go at her." The children who were in the crowd tore up the trees of the schoolmistress and were otherwise troublesome. The magistrate thought that such an onslaught as this, where tongues were wagged and fingers itched for scratching, was "perhaps natural in a mother" and was very trifling since it was "committed in a fit of exasperation." They fixed the penalty at sixpence, so that the public may easily calculate the proportion which exists between an angry onslaught and the discharge of a disagreeable duty. This is another proof that something should be done to secure a definite idea concerning the teachers' legal rights in regard to the infliction of corporal punishment.

—The death of one of the most prominent citizens of Toronto, and two of his children, by drowning, recently shocked the Canadian public. The horrors of the sad event were intensified by the fact that the drowning took place within a very short distance of the shore on which sat the wife and mother of the lost ones. Are there no lessons for teachers and school managers in connection with this awful accident? We do not believe it to be the function of schools to teach swimming; we hold that in every city and town which has sufficient water facilities the municipal council ought to provide safe swimming baths, and a caretaker who would teach swimming as well. The schools have a duty to perform, however, viz.: to teach the best method of resuscitation. The body of one of the children of Mr. Wilkes, a girl fifteen years of age, was warm when taken from the water, in which she had been only a few minutes. There seems to be no reason for doubting that she, at least, if not her father and brother, should have been restored to life if proper means had been used. In connection with lessons on hygiene, or as special lessons, the restorative process should be explained and illustrated. Each step might be shown by actually handling a pupil in the proper manner, and explaining the object aimed at and pointing out the way in which the required action of the organs is brought about. Medical men are usually so far from the scene of drowning accidents that the chances of resuscitation are past before they arrive.

—Maurice Hutton, Master of Arts, recently appointed Professor of Classical Literature in University College, is a Master of Arts of the University of Oxford, and is also a Fellow of Merton College. He was successful in obtaining first-class honors in Greek and Latin at the University Examination by Moderators, and also first-class honours in *Liberis Humanioribus* at the examination for the degree of B.A. by the Public Examiners. He was appointed to the Professorship of Classics at Firth College, at Sheffield, last year, the college being newly founded by the liberality of a gentleman of that name, and being similar to Owens College at Manchester, and forms one of the Colleges connected with the new Victoria University. Mr. Hutton was selected as such Professor by the governing body of Firth College in preference to 28 other competitors.

—In the Foster National competition in writing in the schools of Great Britain and Ireland, the highest four prizes were awarded to Irish girls. The first prize has been won by a girl every time for ten years, with one exception.

Contributions and Correspondence.

OVER-PRESSURE IN EDUCATION.

BY DR. HODGINS, DEPUTY MINISTER OF EDUCATION, ONTARIO.

The re-opening of the schools after the summer vacation is an opportune time to consider the causes of the alleged over-pressure on pupils, and to suggest some way in which it can be beneficially relaxed.

It cannot be denied but that the utterances of eminent physicians on this subject are justly founded on the practice of carrying out too rigidly a prescribed programme, regardless of the physical condition or health of the pupils, or of hygienic causes which, to a professional eye, would sufficiently account for the general listlessness and apathy of the school children. When these things are unobserved by the unpractised, or are overlooked by the trustees and teacher who know something of the matter, the results are, as might be expected, in both cases, highly pernicious.

It cannot, however, be doubted but that much of the ill effects of over-pressure on pupils is due to want of information as to the natural laws which unerringly govern in such cases. It is nevertheless true that even when these laws are understood by the teacher, he is not always, but he is often powerless to give them effect. The ill-ventilated school houses in some localities, and the over-crowded school rooms, with the consequent imperfect classification of the pupils, render it, in a large number of cases, utterly impossible for teachers to give more than a theoretical assent to the principles laid down for their guidance by medical men. They entirely despair in such cases of the opportunity to give them practical effect, and hence the perpetual outcry against teachers for not doing what, either the thoughtlessness of the school authorities, on the one hand, or their parsimony or ignorance, or both combined, on the other, render it impossible for them to do. It is, however, greatly in the power of judicious teachers to mitigate the evils complained of.

The defects and carelessness in school management to which medical men have called attention, may be classified under the three heads of long lessons, long school hours, and an indiscriminate and thoughtless pressure on all pupils alike. Others add to these a pernicious system of discipline, and a no less injudicious system of rewards and punishment. As this latter is, however, a subject which involves the consideration of the personal and moral qualification of a teacher for his high office, we shall not now enter upon it.

With a view to furnish specific information on the subject, as well as a few practical hints to teachers on this important question of over-due pressure on pupils, I prefer to quote the opinions of eminent medical men, rather than to indulge in any reflections of my own. Not only have leading physicians in our own country called frequent attention to the grave questions of over-pressure, but several distinguished writers in England and the United States have uttered words of warning which should not be disregarded by teachers. Of these latter, one of the most noted and practical is Dr. Richardson, of London. In an able lecture on "Learning and Health," he deals with the general question under the heads of *Education in Childhood* and *Education in Boyhood and Girlhood*. I propose under each of these heads to give a few extracts contain-

ing some hints of practical application to the subject in hand. Dr. Richardson under the first heading says :

"The first serious and increasing evil bearing on education and its relation to health lies in too early subjection of pupils to study.

"For children under seven years of age, the whole of the teaching that should be naturally conveyed should be through play, if the body is to be trained up healthily as the bearer of the mind.

"It is in this period that education is too often made for the first time to stand at variance with health. It is in this period that the enforced lesson so often harasses, wearies, and at last darkens the mind. It is in this period that the primary fault is committed of making play a set-off against work, and a promise of a good game an inducement for the persistence in hard labour.

"What is constantly attempted to be taught in this period of life is the saddest detail. I have known a regular imposition of work per day, equal to the full complement of natural work for many a man or woman. There are schools in which children of eight, nine, and ten years of age,—and, it may be, younger children still,—are made to study from nine o'clock till noon, and again, after a hasty meal and an hour for play, from two to five in the afternoon, and later on are obliged to go to lessons once more, preparatory for the following day.

"If you inquire as to the sleep these children get, you will hear that it is disturbed, restless, and often broken. In a healthy child the sleep comes on irresistibly at an early hour, and when the eyes are shut and the body composed, and sleep is carried out till waking time without a movement of position of the body. You ask the healthy child about his sleep, and he says that he is simply conscious of having closed his eyes and opened them again. But these unhealthy, overtaught children have no such elysium. They sleep perchance to dream; passing through strange abodes and narrow crevices which it seems impossible to squeeze into, and waking with a start, in what is commonly called a nightmare. The bad sleep naturally leads to a certain over-wakeful languor the next day; but strangely enough, it interferes with the natural advent of sleep the next night, so that sleeplessness at night becomes a habit. The child must be read to sleep, or told stories until it is off; and thus it falls into slumber fed with the food of dreams, worries, cares, and wonders.

"For fourteen years of my life I was physician to one of the hospitals in this metropolis, in which so many of those who are afflicted with consumption find their way. Twice, and occasionally three times a week, the duty of inquiry into the origin of this disease came to my share of professional work. The field of operation was extensive, and no fact was yielded in it so definitely as this fact, that the larger portion of the consumptive population has been brought up in close school-rooms, where the hours were far too prolonged, and then in close rooms at home, where other work, in confined space, filled up the remaining life time. For such a state of things there are no insurmountable difficulties to improvement. An intelligent public demand for improvement would very soon lead to an extension of what are called garden-schools for the young, in which teaching by amusing lessons or games of learning, in a pure air, and ample space, would secure all the advantages which are now so much desired. In our large and splendid town and city schools, which are becoming distinct and beautiful social features of the age, something of this system is approached, if not attained."

A practical solution of the difficulty of dealing satisfactorily with the question of "Home Lessons" was adopted some time since in Cambridge, Massachusetts. It was there arranged that the whole of the forenoon should be devoted to school recitation, and the afternoon to the explanation of the next day's lesson, with directions as to "how to study" it. The result was, we believe, highly satisfactory. At all events, it greatly lightened the dreary labor of poring over the next day's lessons during hours when the pupil should have been enjoying reasonable recreation and the pleasures of home.

Under the second heading of *Education in Boyhood and Girlhood*, Dr. Richardson speaks with gravity and directness. He says :

"The period of life (from eleven to sixteen or seventeen years of age) is in many respects extremely critical. The rapid growth of the organs of the body; the still imperfect and imperfected condition of the most vital organs; the quick changing and yet steadily developing form of mind; and not to name other peculiarities, the intensity of feeling in the way of likes and hates—all these conditions, physical and mental, make this stage of a human career singular, both to disorders of a functional or even of an organic kind.

"The lines of error carried out in this period are in three directions at least, all tending to impair the healthy and natural growth. The first of these errors is over-work, which is often useless over-work. The second is deficient skill or care in detecting the natural character of ability; in other words, the turn of mind, and, it may be said, capability of the

"learner The third is the system of forcing the mind into needless com-
 "petitions, by which passions, which are not intellectual, but animal,
 "feed the intellectual fool with desire, and, by creating an over-develop-
 "ment of the nervous-physical seats of passion, make or breed a soul of
 "passions which may never be quenched in after life, until it itself puts
 "an end to life abruptly by the dreariness it inflicts.

"I have sketched from a trustworthy record, the work of learning im-
 "posed on a pale and nervous boy at a school, the discipline of which is
 "by some felt to be rather light than heavy . . . For the exercises
 "of the mind imposed eight hours of work are necessary and if this period
 "of labor were enforced, with two hours for meals and relations and four
 "hours for play, it would require all the remaining ten hours out of
 "twenty four for sleep, in order to supply that renovation of body and
 "extra nutrition which growth to the developing organs so vigorously de-
 "mands. This tax is extreme while growth is in progress. But it seems
 "never to be conceived that growth is labour. To put a young horse in
 "harness and to make it work hard while it is growing, is considered the
 "most ignorant of processes, while to work a growing child . . .
 "is often considered the most correct and excellent of processes."

The writer then proceeds to discuss the ill effects of this system of training; and ridicules the application to such cases as he cites the ancient proverb, that "whom the gods love die young." He shows that they are systematically killed by the fatal process of indiscriminate forcing at school. He then points out the common error of "failing to allow for differences of mental capacity and turn of mind in different learners." He speaks of the "many minds of neutral tendency; minds that can take in a certain limited amount of knowledge on almost any and every subject, but which can never master much in anything." He then goes on to say:—

"There are two other very different orders of minds. There is the
 "mind analytical—that looks into details in business, into elements in
 "science, into figures and facts in civil and natural history. . . . There
 "is again the mind constructive, or synthetic; the mind which uses
 "facts and figures only in the end, for its own purpose of work; which
 "easily learns principles of construction, . . . and which cannot,
 "by any pressure inflicted on it, take hold of minute distinctions. . . .
 "In the small school of the youth, as in the great school of the world,
 "these representative orders of mind are ever present. The mistake is
 "that they are so commonly confounded that no change is made in the
 "mode of study to suit the genius of the one or the other. The conse-
 "quence is that lessons are given to the analytical student which he can-
 "not possibly grasp, and to the synthetical student which he cannot
 "possibly master. Under these conditions both chafe and worry, and do
 "not get on. Then they grow fretful and feverish, are punished or slight-
 "ed. And so, if they are unduly forced, they grow up unhealthy
 "in body and in mind.

"These bad physical results the physician alone sees, as a rule, . . .
 "nor does he, nor do others, see the remaining evils from the physical
 "side. . . . As William Howitt says: "There is no mistake so fatal
 "to the proper development of man or woman as to pile on the immature
 "frame, and on the yet unfinished fabric of the human body, a weight of
 "premature and, therefore, unnatural study. In most of these cases,
 "where nature has intended to produce a first-class intellect, she has
 "guarded her embryo genius by a stubborn slowness of development.
 "Moderate study and plenty of play and exercise in early youth are the
 "true requisites for a noble growth of intellectual powers in man and for
 "its continuation in old age."

These extracts may serve to put teachers in possession of the matured opinions of eminent medical men on the evils of the undue pressure of studies on the youth under their care. A knowledge of the facts and opinions cited will be of great value to those teachers who sympathize with the popular objections to this undue pressure, and who are anxious to mitigate its evils as far as possible. It will no doubt aid them in dealing with the individual classes of pupils whose mental peculiarities are so fully described in the foregoing extracts.

GYMNASTICS OF THE BRAIN.

BY DR. GRANT, M.P.

Read before the Dominion Medical Association, Ottawa.

In presenting this subject for the consideration of the Association, I feel satisfied that no more important topic could occupy the attention of medical science than that which closely concerns the

welfare of society, and promotes in the most comprehensive sense, the "*mens sana in corpore sano*." Mental hygiene and physical hygiene are inseparably connected, and a few observations at present may not be out of place in regard to the essential balance of mind and body, and the application of a few ordinary principles to the present system of education. The physical well-being of the pupils in our schools should be as carefully guarded as the acquirement of knowledge. Year after year our educational system is becoming more complicated, and even the so-called Public School course is quite academic in character and more than an ordinary test of strength to the young brains, in their plastic state, budding forth to the supposed stage of practical usefulness. While acknowledging the rapid increase in the required subjects of study, branch after branch being yearly added, we must not overlook the very tree of life and the processes requiring such close attention to obviate the inroads of disease which soon saps vitality and ruins the prospects of the brightest specimens of intellect in the incipient stage of development. The mental and physical well-being of the pupils should advance equally, otherwise growth in either case will become, in a measure, one-sided. While approaching this subject I am fully aware that it is dangerous ground; still, as a matter of public duty, it may not be out of place to advert briefly to a few points respecting which it is important all classes of the community should alike have full information. The point to which I first wish to direct attention is "the brain of youth." The problem, and one of the most difficult and trying of the age in which we live, is, how to build the best brains out of the materials placed at our disposal. Education or educated evolution certainly has considerable to do with the development of mental power. The building of a brain is a social problem of more than ordinary interest to every family circle. Mothers particularly have to do with it, and teachers are desirous of drawing out innate power in its various forms, just as varied and peculiar as the phases of the human countenance. The brain, the chief part of the nervous system, must be built up in keeping with the development of the whole body, the one depending greatly on the other, in order to arrive at the greatest degree of power and perfection, either as to organization of structure or performance of function. Dr. Maudsley, in his Gullstonian lectures of 1879, says:—"The time has come when the immediate business which lies before anyone who would advance our knowledge of mind unquestionably is a clear and searching scrutiny of the bodily conditions, of its manifestations in health and disease; he must recognize how entirely the integrity of the mental functions depends on the bodily organization—in fact, must acknowledge the unity of mind and body." The brain, the seat of the mind, possesses a mechanism peculiar in itself, and a power diversified in character, presenting various phases and peculiarities, throughout the highest order of intellectual development in the *genus homo*. In the crude and almost rudimentary state of the cerebral pulp—soft, pliant, and undecided in cerebral type, as to inherent mental power or capacity—more than ordinary care must be observed in suddenly straining the structure nature has put in the cranial cavity. The drawing out process embraced in the true education must be conducted with care, caution, and more than ordinary guidance and observation. It is here that mental hygiene operates, embracing as it does all that relates to development, exercise and the maintenance of mental activity—in fact, education in the most comprehensive sense. The brain may be considered a central telegraphic office, constantly distributing messages to every part of the system; and in order to attain success in the working of the complicated nervous machinery, it is absolutely necessary to know something of the physiological principles involved in the promotion of a single thought or idea. It is a well-known fact that the growth, training

and employment of the young, aid in the building up of a brain. On this basis Dr. Brown-Sequard proposed the systematic training of the left hand in children, in order to develop the right side power of the brain equal to the left. In fact it is necessary, for the building of a powerful brain, that all the bodily organs should take their part. Brain labor or exercise in the work of the school, now termed cerebration, is the problem which to-day is occupying the attention of close observers in the path of intellectual development. Taking into consideration the pliant character of young brain tissue in the very midst of the formative process of thought and ideality, the degree of exercise to the point of mental strain must be guarded most carefully and patiently. As the normal performance of a function strengthens and develops the organ itself, so the brain becomes similarly influenced. Here student life comes in, with its advantages and disadvantages, and in order to attain the highest degree of intellectual development, reason, rather than cramming, is likely to bring about the desired object. While brain tissue is in the elementary stage, let elementary education be the pabulum of thought. As Huxley has remarked, "freshness and vigor of youth must be maintained in mind as well as body." The more closely we examine the subject of mental hygiene, the more closely it partakes of the common-sense principles how best to educate and train to achieve the greatest degree of culture, embracing all the interests of man in his varied relations of life. To accomplish these desired results, an important question arises: At what age should children be admitted to school? In the consideration of this point the peculiarities of brain structure require at least a passing notice. Fat, phosphorus and water are important factors in the elimination of brain power. In the infant the chief mass of the brain is soft and uniform, with smooth ventricles and few convolutions. In the adult we find much better defined brain substance, with elaborate ventricles and more numerous convolutions, less regular in character. In the infant the peripheric nerves are larger in proportion than the nervous centres, excepting the sympathetic ganglia. The head of the new-born infant is one-fourth the length of the body and one-fifth the weight, and all the parts of the body have their most rapid growth within the first three years of life. Between the fifth and sixth years the base of the brain grows rapidly. The interior of the brain at this age also gives evidence of rapid growth. The receptive faculties here obtain power, and at this stage the foundation of education should be commenced slowly, gradually and cautiously, great care being bestowed to become acquainted with innate peculiarities of the childish brain, while being stamped with the first thoughtful impressions. From all the information on this subject, the seventh year is considered the period for the commencement of regular mental work, not however to strain the brain, but rather to bring about regular and gradual training of this intricate structure, having so many functions and taking so very important a part in the growth of the body. The brain is said to digest more than even the stomach in a sense, and certainly it governs largely the digestive process, and on that account how careful the teacher must be in observing the growth and vigor of youth, so necessary in the formative process of thought, the bases of the common sense principles of education. It is a well-known fact that children sent to school too young are more liable to the various diseases of childhood. Irregular temperature, defective muscular exercise, and tight lacing are powerful factors in the development of disease. Improper position, inclining to one side or the other while studying at the ordinary desk, frequently results in spinal deformity. How often it is the case that children when failing in health, when subjected to a skilled examination, are found to have a high shoulder and a curved spine, all of which have been permitted to pass unnoticed until advanced and seated as structural

disease. During school life, the points for close examination are numerous, and too great care cannot be taken in guiding the tiny structures of those frames, which afford such comfort in the home circle, and in time take their part in the intellectual development of national power and future greatness. To correct such difficulties and strengthen such sets of muscles as give evidence of failing power, McLaren, of Oxford, has established a gymnasium, upon the entry to which a close and careful examination is made and a systematic method of training is adopted, sufficient to meet the growing requirements of the system. Glasgow University has also its gymnasium, and, although not compulsory, its necessity is daily attracting closer inquiry. McGill College is also adopting the same principle. The gymnastics of brain or body should not conflict with each other, and in the growth and development of power the results to be achieved will certainly be greater than by cramming, under a system of hot-house vegetation, through which both physical and intellectual vigor become warped, and practical usefulness for the varied spheres of life considerably lessened. Hospital statistics point out that the principal mortality in children has passed between the seventh and eighth year, which strengthens the argument very considerably as to the best time to enter school. Parents should not be anxious to convert schools into nurseries, and this point, I feel assured, has not escaped the attention of those whose immediate supervision the whole subject of school life is placed in our Dominion. To the ordinary observer, it must be apparent that the period between childhood and boyhood is one surrounded by constant anxiety and requiring more than ordinary care and watchfulness. For children under seven years of age the great proportion of the teaching should be conducted or conveyed as play; not as a play upon words, but a play, in the development process of germinal intellectual power. It is in these three years of childhood that education should not in any way conflict with health. Short hours of study, vigorous digestion, kept up by ample physical exercise, will assuredly bring about better results than the over-stimulation of young people by competitive examinations, inducing a degree of mental high pressure, which may make bright pupils in childhood; first in every class; laden with prizes, but oftentimes sapped as to the requisite physical power for the varied callings of after-life. Those who require to live by muscular power chiefly must develop the power early. In the cultivation of brain power direction should, as soon as possible, be given to the practical usefulness of the future. Thus preserved, child power, in time, becomes good man power; and in the march of intellectual progress affords strength and endurance to the future of our Dominion. In an address before the State Medical Society of New York, Dr. Agnew draws attention to the increasing prevalence of asthenopic, refractive, and neurotic difficulties among scholars at the present day. These diseases, he considers, are growing rapidly in schools, colleges, and other centres of civilization. In both England and Germany we have ample evidence of the same. The question arises, how are such diseases to be most judiciously guarded against? By careful scientific inspection, and the rigid enforcement of personal and local sanitation. Defective school architecture has much to do with bringing about defects of vision through unequal expansion and contraction of the pupils. Hence the importance of the proper adjustment of light in the school-room. To correct such difficulties, we are fortunate in having a city medical inspector, and the importance of such inspection cannot be over-estimated in carrying out efficiently the best working of our educational institutions. Dr. Cohn, of Breslau, examined the eyes of 10,000 children, and found that, in various degrees, there was a rapidly increasing near-sightedness, and in some of the higher classes the near-sighted students were nearly sixty per cent. of the scholars. From these facts it is quite

evident medical men have an important duty to perform outside of the privilege of curing disease, if possible, once it has been developed. Thus we observe the absolute necessity of proper sanitary inspection, to stay the evils now on the increase, chiefly through an over-taxation of nerve tissue and nerve power, not in keeping with the physiological principles inculcated at the present day. From various sources it is quite evident that, within a few years, lung diseases are on the increase in school children, and, in many instances, may be attributed to over-crowding and long and exhausting confinement in a vitiated atmosphere. The lofty ceilings of our new school houses are evidence of progress, but proper ventilation must be carried to such ceilings, otherwise they will become receptacles of foul air, to vitiate the entire atmosphere of the room. Fresh air is about the most important food of the system, and nowhere more than during school life should there be a proper and well-regulated supply. It is a well-known fact that every individual poisons fifteen cubic feet of air every hour, in consequence of which thirty cubic feet should be supplied every hour. If we desire to stay the progress of epidemic cases, there should be every effort made to limit the number of pupils to the area of class-room accommodation. Well might Dr. Thomas Rochester remark at the Medical Society meeting at New York in June, 1876, that "Education was not in all instances the blessing which it seemed unmistakably to be, for it became necessary to acquire it at too great a risk;" and, under such circumstances, he recommended that every school district should have a well-paid medical director, who should devote himself thoroughly and conscientiously to the many hygienic duties of the position. It is impossible to estimate the importance of this subject, which at present is engaging the attention of public men in every country. Dr. Bowitch, in his address at the International Medical Congress, Philadelphia, 1876, stated that over 200,000 persons are annually slaughtered in the United States by preventable diseases. What the death rate in the school children of the Dominion may be, or in those of the Province of Ontario, now numbering 496,000, between the ages of five and sixteen years, I could not offer an estimate. From personal observation, I fear that the cramming system of the present day is not likely to produce a generation equal to the one now passing away. The most useless individuals in society are those who know everything and can do nothing. Our country is rapidly developing, and we require workers; workers not converted into drones, by excessive ill-directed application in the buoyant period of youth. Let our education be directed towards the object in view, surrounded by the principles of common sense, and the outcome will be more lasting, the results more practical, and the rising generation one quite able to grapple with the varied emergencies of certainly a trying age.

DEPARTMENTAL EXAMINATIONS.

SUBSTANCE OF AN ADDRESS BEFORE THE HIGH SCHOOL SECTION,
TEACHERS' PROVINCIAL ASSOCIATION, BY D. C. M'HENRY, M.A.,
COLL. INST., COBOURG.

The necessity for some such examinations as those now conducted by the Education Department cannot be doubted. On this point there is no great difference of opinion. Their peculiar departmental character arises from the direct oversight which the State, in this, as in every enlightened country, is giving to the cause of education; and, more particularly, from the financial aid which our several municipalities receive from the general treasury, to supplement local contributions for educational purposes.

Good schools presuppose good teachers, and good teachers must receive suitable remuneration. To determine their qualifications, there must be certain standards, to which they shall be required

to attain. And to pay them suitably, legislative aid is found necessary. Hence our examinations, and their departmental character.

Of course, the utility of these examinations depends on their adaptation to the end in view—to their *thoroughness* and *fairness*. Examinations for teachers ought to be of such a nature as to necessitate careful preparation both of the *matter* to be afterwards taught, and practice in the *best methods* of instruction.

Our examinations, professional and non-professional, are supposed to meet the general requirement of furnishing the country with a supply of properly qualified teachers.

I believe that these tests are much superior to those of former years, and that no serious objections can be urged against them.

We are not assembled, however, to sit in mute admiration of any part of our educational system, simply because it is an improvement on the past. Had that course been hitherto pursued, we might still be trudging along in the old paths, the slaves of methods long since laid aside.

With a view, therefore, to elicit opinion, and, if necessary, to secure improvement in certain particulars, I shall venture to suggest a few modifications which I think might be advantageously adopted.

And, first of all, it seems to me that while the Education Department should take a very prominent part in all matters pertaining to our schools, the present tendency is rather to ignore local interest and supersede local control by centralizing all real power in a non-representative and semi-responsible body.

It has long been deemed a fundamental principle in our educational polity that an interest can best be created and sustained by extending to the people a fair share of authority. For reasons not fully apparent, a centralizing policy seems now to prevail, the most objectionable feature of which is, as before remarked, that privilege and power withdrawn from the people are being entrusted to a select committee on which the people have no direct representation.

Probably many of the changes introduced from time to time would meet with less opposition if those most directly interested were represented on this Executive Council. All this may be said without in any way reflecting on the gentlemen selected as members of this committee. It is the *principle* adopted—superseding the former representative system—to which exception is taken.

From some cause or other, our present methods are considered unnecessarily expensive. If the accumulation, in Toronto, of work formerly done throughout the province sufficiently accounts for the present outlay, it is quite susceptible of demonstration; and the necessary information should be given. The *results* now obtained by our educational machinery are by very many considered incommensurate with the cost to the country.

If our High School grants, for example, are not increased in proportion to the increase of work assigned them; if, as some trustees assert, "the mill in Toronto is keeping the grist and giving them the toll;"* if, in short, there is any misappropriation of school funds, it ought to be rectified in a manner satisfactory to any reasonable demands of dissatisfied trustees and teachers.

To speak of examinations more in detail, I believe the ENTRANCE EXAMINATION would be more effectual, (i) if adjacent Public Schools were encouraged to use it more generally as a test for promotion from the fourth form; (ii) if definite instructions were given Head Masters as to their presiding, and the remuneration to be received. Any *perquisites* available should be secured to those who have to do the work. The Inspector, in other words, should not be burdened with the distribution of this patronage. (iii) The

*It is a pity that Mr. M'Henry should have quoted such nonsense. The method of conducting examinations introduced by Mr. Crooks largely reduced the cost of the Provincial examinations.—Ed.

time of holding the examination should be more definitely fixed. (iv) I think the end sought might be attained, with a saving of labor and expense, if, in making our returns, the total on each subject were given (as in case of Third Class Teachers), without the tedious process of entering the value given to each answer.

THIRD CLASS EXAMINATION.—The adoption of the Intermediate for the County Board Examination is likely to meet with very general approval, if a committee of examiners can be secured large enough to carefully examine the papers in time to prevent confusion at the opening of schools after vacation. The certificate will, doubtless, have a provincial value, and therefore every county can be supplied with teachers. It will remove from thousands of mere boys and girls, too young to teach, the temptation of trying to pass the third-class examination; and it will tend to reduce the thousands of surplus teachers in our country. Again, public school teachers will be less likely to neglect their ordinary work for the special preparation of teachers, most of whom will hereafter find it to their advantage to attend High Schools.

A very careful check will be needed, however, at Model Schools, on the admission of pupil teachers who are under age; since there is no restriction in case of Intermediate candidates.

In the character of third-class papers I know of nothing which calls for special notice. As a whole, I think they could not be materially improved.

THE INTERMEDIATE EXAMINATION has its friends and its opponents, simply because, while it has many advantages, it is not without its disadvantages. The change from semi-annual to annual has removed some serious objections; and the favorable recognition it is receiving from some of our Universities, the Medical Council, and the School of Practical Science, will greatly add to its practical value. There are still some examining bodies whose concurrence we must try to secure, especially the Law Society and Toronto University. If the promoters and friends of the Intermediate can aid us in these directions, they will take the surest way of rendering it still more acceptable.

Any examination adopted by the Department merely, or even primarily, to determine the apportionment of legislative aid, is likely to be regarded as an unwelcome burden imposed on our schools, and one which does not furnish such motives as are needed in order to secure the hearty co-operation of our pupils. Such was the Intermediate at first, and hence the suspicion with which it was regarded by both teachers and pupils.

In reference to the instructive and educating influences of this examination, while I think they are somewhat overrated, I believe a more definite direction is given to our work than under the former arrangement.

The evils peculiar to any such general change appeared on its introduction. Some of these evils may be fairly regarded as inevitable; others certainly arose from overburdening teachers and pupils.

The pecuniary advantages at first promised, absorbed the attention of trustees and teachers to such an extent as to induce an unhealthy and, in some cases, undignified competition, the evil effects of which are still to be seen. The grant per pupil has become so small that less importance is now attached to the examination than at first. It is generally admitted, indeed, that to be guided merely by the results of the Intermediate may prove *disappointing to trustees and unjustly humiliating to faithful teachers.*

The arrangement of subjects and options appears to give general satisfaction. A change will be necessary, however, in case of students who are aiming at the Medical Council Matriculation; since, in addition to the compulsory subjects, they are required to take the science group, Latin, and either French or German. As the time-table is now arranged, only one of these groups is accessible.

Some fault has been found with the method adopted, apparently with design, for lessening the chances of candidates at this examination. If the increase of candidates to between three and four thousand be deemed too great, there are several ways of reducing the number, to which no objection can be urged: one by exacting a higher percentage; a second by an increase of work in a given time. There is still another, by purposely giving to one or more of the papers such an unusual turn as is not anticipated in the general line of teaching pursued. The last method we think is hardly justifiable. Having reference to the programme of study and to former papers on the same subject, the course is freely construed into a breach of faith as between pupil and examiner.

These remarks will be deemed irrelevant by those who have heard no complaints in the direction indicated.

OF THE FIRST CLASS EXAMINATION I shall only say that I think we must all approve of the recent regulations by which honor undergraduates of our Universities are admitted as having passed an equivalent for the non-professional examination.

As before remarked, I regard our Departmental Examinations superior to those they superseded. At the same time, I do not think that their warmest admirers consider them incapable of improvement. Any reasonable suggestions to which our discussion may give rise will therefore be likely to receive due attention from the Minister and his advisers.

Mathematical Department.

Communications intended for this part of the JOURNAL should be on separate sheets, written on one side only, and properly pagged 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.

UNIVERSITY OF TORONTO—ANNUAL EXAMINATIONS.

ARTS: MATRICULATION.

MATHEMATICS.

Examiner—F. HAYTER, B.A.

1. Define *ratio* and *proportion*. Prove that in every proportion the product of the extremes is equal to the product of the means.

Compare the rates of speed of two locomotives, one of which travels $897\frac{1}{2}$ miles in $11\frac{1}{2}$ hours, and the other $262\frac{1}{4}$ miles in $8\frac{1}{2}$ hours.

2. Describe the units of length, surface, and volume in the English and French systems. Given the numerical value of any length in one system, express it in the other.

3. A proprietor of Three per Cent. Consols receives his half-yearly dividend and lays it out in the purchase of more Consols at 90. His next half-year's dividend is £457 10s.; how much does this dividend exceed the former?

4. Simplify

$$(i) \frac{acx^2 + (ad - bc)x - bd}{a^2x^2 - b^2}$$

$$(ii) \frac{x^2 + 3x + 2}{x^2 + 2x + 1} \times \frac{x^2 + 5x + 4}{x^2 + 7x + 12}$$

$$(iii) \left(\frac{ay}{x}\right)^{\frac{1}{2}} \cdot \left(\frac{bx}{y^2}\right)^{\frac{1}{2}} \cdot \left(\frac{y^2}{a^2b^2}\right)^{\frac{1}{2}}$$

5. Divide by Horner's Method

$$(i) x^3 - x^2 + 10x - 10 \text{ by } x^2 - 3x^2 + 4x - 2.$$

$$(ii) 6x^4 - 28x^3 + 22x^2 - 16 \text{ by } 2x^2 - 5x - 8.$$

6. Solve

$$(i) (1+x)^{\frac{1}{2}} + (1-x)^{\frac{1}{2}} = 2^{\frac{1}{2}}$$

$$(ii) \begin{cases} \frac{x}{9} + \frac{y}{8} = 48 \\ \frac{x}{8} + \frac{y}{9} = 42 \end{cases}$$

$$(iii) \begin{cases} 7yz = 9(y+x) \\ xx = 8(x+x) \\ xy = 8(x+y) \end{cases}$$

7. A messenger starts on an errand at the rate of 4 miles an hour; another is sent $1\frac{1}{2}$ hours after to overtake him; the latter walks at the rate of $4\frac{1}{2}$ miles an hour; when and where will he overtake him?

The road from a place A to a place B first ascends for 5 miles, is then level for 4 miles, and afterwards descends for 6 miles, the rest of the distance; a man walks from A to B in 8 hours 52 min.; the next day he walks back to A in 4 hours, and he then walks half way to B and back again in 8 hours 55 minutes; find his rates of walking up hill, on level ground, and down hill.

8. Solve

$$(i) x^2 - 2x + 6(x^2 - 2x + 5)^{\frac{1}{2}} = 11$$

$$(ii) \begin{cases} x^4 + y^4 = 257 \\ x + y = 5 \end{cases}$$

$$(iii) \begin{cases} a^x b^y c^z = l \\ a^y b^z c^x = m \\ a^z b^x c^y = n \end{cases}$$

9. From a given point draw a straight line equal to a given straight line.

10. If one side of a triangle be produced, the exterior angle is greater than either of the interior opposite angles.

From a given point there can be drawn to the same straight line only two straight lines equal to one another.

11. If a straight line touches a circle, and from the point of contact a straight line be drawn cutting the circle, the angles made by this line with the line touching the circle shall be equal to the angles which are in the alternate segments of the circle.

P and Q are two points in the circumference of two concentric circles. The angle included between the tangents at P and Q is equal to that subtended at the centre by PQ .

SOLUTIONS.

$$1. \frac{897\frac{1}{2}}{11\frac{1}{2}} \div \frac{262\frac{1}{2}}{8\frac{1}{2}} = \frac{91}{81}$$

$$8. \text{Amt. of stock} \times \frac{1\frac{1}{2}}{100} + \text{amt. of stock} \times \frac{1\frac{1}{2}}{100} \times \frac{1\frac{1}{2}}{90} = 457.5$$

$$\therefore \text{amount of stock} = 80,000.$$

$$\therefore \text{excess required} = 8000 \times \frac{1\frac{1}{2}}{100} \times \frac{1\frac{1}{2}}{90} = \text{£}7 \text{ } 10s.$$

$$4. (1). \frac{cx+d}{ax+b} \quad (2) \frac{x+2}{x+3} \quad (3) \left(\frac{y}{x}\right)^{\frac{1}{2}}$$

$$5. (1). x^3 + 8x^2 + 5x + 5. \quad (2). 3x^2 - 4x + 2.$$

6. (1). Cubing both sides

$$1 + y + 8(1-x^2)^{\frac{1}{2}} \{ (1+p)^{\frac{1}{2}} + (1-x)^{\frac{1}{2}} \} + 1-x = 2,$$

$$\text{or } 8(1-x^2)^{\frac{1}{2}}(2^{\frac{1}{2}}) = 0, \text{ or } x = \pm 1.$$

(2). 144, 216.

(8). Equations become

$$7 = \frac{9}{x} + \frac{9}{y}, \text{ \&c. } x = -\frac{114}{28}, y = \frac{144}{71}, z = \frac{144}{41}$$

7. If x be the time $4x = (x-1\frac{1}{2}) 4\frac{1}{2}$, or $x = 9\frac{1}{2}$.

If x, y, z be the rates of walking up hill, on the level, and down

$$\text{hill, } \frac{5}{x} + \frac{4}{y} + \frac{6}{z} = 8\frac{1}{2}, \text{ \&c. } x = 8, y = 4, z = 5.$$

$$8. (1). \text{Completing square } x^2 - 2x + 5 + 6\sqrt{x^2 - 2x + 5} + 9 = 25.$$

$$\therefore x^2 - 2x + 5 = 4 \text{ or } 64,$$

$$\therefore x = 1, \text{ or } 1 \pm 2\sqrt{15}.$$

$$(2). \text{Squaring the second and subtracting } xy(4x^2 + 8xy + 4y^2 - 2xy)$$

$$= 868, \text{ or } xy(100 - 2xy) = 868; \text{ whence } xy = 46 \text{ or } 4. \text{ Then}$$

$$x + \frac{46}{x} = 5; \therefore x = \frac{1}{2}(5 \pm \sqrt{-159}). \text{ Also, } x + \frac{4}{x} = 5;$$

$$\therefore x = 4 \text{ or } 1.$$

(8). Taking logarithms $x \log a + y \log b + z \log c = \log l$, &c.

Let O be the common centre, A the point where the tangents intersect, and K the intersection of PA, OQ . Then angles at P and Q are equal; also angles PKO, QKA ; \therefore angles POQ, PAQ are equal.

EUCLID—HONORS.

Examiner—F. HAYTER, B.A.

1. The angles which one straight line makes with another upon one side of it are either two right angles or are together equal to two right angles.

2. If the square described upon one of the sides of a triangle be equal to the squares described upon the other two sides of it, the angle contained by these two sides is a right angle.

3. If a straight line be divided into any two parts, the rectangles contained by the whole and each of the parts are together equal to the square on the whole line.

4. Describe a square which shall be equal to a given rectilinear figure.

5. Find the centre of a given circle.

6. If two circles touch each other externally in any point, the straight line which joins their centres shall pass through that point of contact.

7. From a given circle cut off a segment which shall contain an angle equal to a given rectilinear angle.

8. Inscribe a circle in a given triangle.

9. If a straight line be drawn parallel to one of the sides of a triangle, it shall cut the other sides, or these produced, proportionally.

10. Triangles which have one angle in the one equal to one angle in the other, and their sides about the equal angles reciprocally proportional are equal to one another.

11. Rectilinear figures which are similar to the same rectilinear figure are also similar to one another.

12. If one angle of a triangle is equal to the sum of the other two, the greatest side is double of the distance of its middle point from the opposite angle.

13. One of the diagonals of a parallelogram being given, and the angle which it makes with one of the sides, complete the parallelogram, so that the other diagonal may be parallel to a given line.

14. Describe a rectangle equal to a given square, and having one of its sides equal to a given straight line.

15. Two points are taken in the diameter of a circle at equal distances from the centre. Through one of these draw any chord, and join its extremities and the other point. The triangle so formed has the sum of the squares of its sides invariable.

16. If ABC is a triangle described in a circle, and the tangent at A meets BC produced in D , prove that

$$OD : BD = OA^2 : BA^2$$

SOLUTIONS.

12. Let ABC be the triangle, and $A = B + C$. Make $CAD = AOD$; then $EAD = ABD$; $\therefore OD = DA = DB$.

13. Make angles at the ends of the given diagonal and on opposite sides of it equal to the middle point of this diagonal draw a line parallel to the line given in position.

14. An extension of Prop. 44, Bk. I.

15. A, B be the points, O the centre, CD the chord. Then $AO^2 + CO^2 = 2CO^2 + 2OB^2 = \text{const.}$; so $AD^2 + DB^2 = \text{const.}$; and rectangle $OB \cdot BD$ is const. Hence $AO^2 + AD^2 = CO^2 + BD^2 + 2OB \cdot BD$ is const.; $\therefore AO^2 + AD^2 + CD^2$ is const.

16. The triangles DOA, DAB are similar.

$$\therefore \frac{OD}{OA} = \frac{DA}{AB} \text{ and } \frac{AB}{BD} = \frac{AO}{AD}$$

$$\therefore \frac{OD}{BD} \cdot \frac{AB}{OA} = \frac{AO}{AB} \text{ or } \frac{OD}{BD} = \frac{AO^2}{AB^2}$$

ALGEBRA—HONORS.

Examiner: A. K. BLACKDAR, B.A.

1. Multiply $a^3 - 2 + a^3$ by $a^{-1} - 2 + a$, and divide the product by $a^{-2} - a^2 - 2a(a^2 - 1)$.

2. Divide $\frac{1+x^3}{(1-x)^3} \left(\frac{1}{1-x} - \frac{x}{1-x^2} + \frac{x^2}{1-x^3} \right)$
by $\frac{1-x+x^2}{(1-x)(1-x^2)(1-x^3)}$

3. Resolve into factors:

(1) $2x^3 - 6x^2 - x + 8$.
(2) $2ab + (a+b)\{(a-b)^2 + 8(a-b)\} + 8a^2b^2$.

If $a+b+c=2s$, shew that

$$s(s-b)(s-c) + s(s-c)(s-a) + s(s-a)(s-b) - (s-a)(s-b)(s-c) = abc.$$

4. Define the terms *Common Divisor* and *Common Multiple*, and prove that every common multiple of two algebraic expressions is a multiple of their least common multiple.

If $p^2 + pq + q^2 = 0$, shew that $x^3 + px + p^2$ and $x^3 + qx + q^2$ have a common divisor $x + p + q$, and a common multiple $x^3 - p^3$ or $x^3 - q^3$.

5. Find the values of x and y from the equations

$$\begin{cases} ax + by + c = 0 \\ a_1x + b_1y + c_1 = 0 \end{cases}$$

by the method of (1) substitution, (2) comparison, (3) elimination by means of arbitrary multipliers.

Find the relation between the constants when the values of x and y are indeterminate.

6. Solve the equations:

(1) $\frac{a}{x-a} + \frac{b}{x-b} + \frac{c}{x-c} = \frac{abc}{(x-a)(x-b)(x-c)}$
(2) $\sqrt{x^2 + 3x - 10} + x = \sqrt{x + 5} - 5$.
(3) $\begin{cases} xz + yz = xy, \\ x^2(5z + y) = 5yz, \\ 10x - 6xz = 10m^2z. \end{cases}$

7. Show how to find the product of two simple surds $m\sqrt{a}$ and $n\sqrt{b}$.

From the equation $x^4 - 10x^2 + 1 = 0$, find the values of x in the form of the sum or difference of two surds; and the values of $\frac{1}{x}$ correct to three decimal places.

8. Insert m arithmetic means between a and b .

If 1 be the $(m+1)$ th term in the A.S. of which the first term is

$\frac{m}{n}$ and the last term is $\frac{n}{m}$, shew that the sum of the series is

$$\frac{(m+n+1)(m^2+n^2)}{2mn}$$

9. Sum the series

$$\frac{8}{\sqrt{3}} + \frac{\sqrt{3}}{\sqrt{2}} + \frac{1}{2}\sqrt{3} + \dots$$

to $2n$ terms, and to infinity.

10. Find the number of permutations of n things taken r at a time.

Find the number of permutations of the letters in the word *Toronto*, taken all together.

How many different numbers, each containing 3 figures, can be formed out of the 10 digits, in each number two figures at least being alike?

11. Find the greatest term in the expansion of $(x+a)^n$, n being a positive integer.

Write down the 7th term in the expansion of the square root of $(1-\sqrt{x})^3$.

Shew that

$$n^{-n} = \left\{ \frac{1}{2} - \frac{2n-1}{8} + \frac{(2n-1)(2n-2)}{4} - \dots \right\}^{n-1}$$

SOLUTIONS.

1. $= \frac{(a^{-1}-a)^2(a^{-1}-2+a)}{(a^{-1}-a)(a^{-1}+a-2)} = a^{-1}-a$.

2. $(1+x+2x^2+x^3) \frac{1+x}{1-x}$.

3. (1) $(x-3)(x\sqrt{2}+1)(x\sqrt{2}-1)$.

(2) $= 2ab + 4(a^2+b^2) + 8a^2 + 8b^2 = 2(a+2b^2)(b+2a^2)$.

(3) $= s\{3s^2 - 2(a+b+c)s + (ab+bc+ca)\} - \{s^2 - (a+b+c)s^2 + (ab+bc+ca)s - abc\}$, which, on substituting $2s$ for $a+b+c$, reduces to abc .

4. On substituting $-(p+q)$ for x in x^3+px+p^2 and x^3+qx+q^2 , we see that $x+p+q$ is a factor of both provided $p^3+pq+q^3=0$. The factor will be contained in x^3-px+p^2 $x-q$ times, and in x^3+qx+q^2 $x-p$ times; hence C. M. is x^2-p^2 or x^2-q^2 .

5. The values of x and y are indeterminate when they assume the form $\frac{0}{0}$; which requires $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$,

there being in this case evidently but one independent equation.

6. (1) $x = \frac{ab+bc+ca \pm \sqrt{a^2b^2+b^2c^2+c^2a^2}}{a+b+c}$

(2) Equation becomes $\sqrt{(x+5)(x-2)} + (x+5) = \sqrt{(x+5)}$, $\therefore x+5=0$ gives one root, $x=-5$, and others are obtained

from $\sqrt{x-2} + \sqrt{x+5} = 1$, where $x = \frac{-b \pm \sqrt{-148}}{6}$.

(3) From (2) & (3) subtracting $x^2 = \frac{5x(y-1)}{y-3}$

Also from same dividing $\frac{5x+y}{10y+6} = \frac{y}{2}$, or $x = \frac{2y}{5(1-y)}$.

From first of these with (1) $\frac{y^2z^2}{(y-z)^2} = \frac{5z(y-1)}{y-3}$, and substitu-

tin the value of z in terms of y , and simplifying $8y^2-4y+1=0$, i.e., $y=1$ or $\frac{1}{2}$, and thence the values of z and x may be obtained.

7. $\sqrt[n]{a} \times \sqrt[n]{a} = \sqrt[n]{a^n} \times \sqrt[n]{a^n} = \sqrt[n]{a^{2n}}$.
 $x^3 = 5 \pm 2\sqrt{6}$; $\therefore x = \pm(\sqrt[3]{5} \pm \sqrt[3]{6})$

$$\frac{1}{x} = \frac{1}{\sqrt{2} + \sqrt{3}} = \frac{\sqrt{3} - \sqrt{2}}{3-2} = \cdot 817 \dots$$

8. From formula $l = a + (n-1)d$, $1 = \frac{m}{n} + m.d$, $\therefore d = \frac{n-m}{mn}$.

Also from same formula $\frac{n}{m} = \frac{m}{n} + (\text{no. of terms} - 1) \frac{n-m}{mn}$
 giving no. of terms = $m+n+1$

$$\therefore s = \left(2 \frac{m}{n} + (m+n) \frac{n-m}{mn} \right) \frac{m-n+1}{2} = \text{given expression.}$$

$$9. r = \frac{1}{\sqrt{2}}; \therefore S = \frac{8 \left(\frac{1}{\sqrt{2}} \right)^{2n} - 1}{\sqrt{8} \frac{1}{\sqrt{2}} - 1} = \sqrt{8} \frac{1}{\frac{1}{\sqrt{2}} - 1}$$

$$\text{And } \Sigma = \frac{\sqrt{8}}{1 - \frac{1}{\sqrt{2}}} = \frac{\sqrt{6}}{\sqrt{2} - 1}$$

10. (1) $\frac{1}{2} \frac{7}{8}$. (2). By Todhunter, § 501, the number of permutations of 10 things where each may occur once, twice six times is 10^6 . From these we are to exclude the ones in which a particular digit occurs but once, of which there are $\frac{10}{4}$, making $10^6 - \frac{10}{4}$ in all. But we must also exclude those numbers in which ciphers occur to the left. Thus the number in which one cipher occurs to the left is $10^5 - \frac{10}{5}$; in which two ciphers occur $10^4 - \frac{10}{6}$, &c.

$$11. + \frac{\frac{3}{2} \left(\frac{3}{2} - 1 \right) \dots \left(\frac{3}{2} - 5 \right) x^3}{6}$$

$$\begin{aligned} n^{\frac{1}{1-n}} &= n^{-1} \cdot n^{\frac{n}{1-n}} = n^{-1} \left\{ 1 - (1-n) \right\}^{\frac{1}{1-n}} \\ &= n^{-1} \left\{ 1 - 1 + \frac{n}{2} - \frac{n(2n-1)}{6} + \dots \right\} \\ &= \frac{1}{2} - \frac{2n-1}{6} + \dots \end{aligned}$$

TRIGONOMETRY—HONORS.

Examiner: A. K. BLACKADAR, B.A.

1. Define the common logarithm of a number.
 If x be the logarithm of N to base 2, and 41.664 be the logarithm of N to base 8; find the common logarithm of x .

2. Prove

$$(1) \log \frac{ab}{c} = \log a + \log b - \log c.$$

$$(2) \log \sqrt[n]{a^m} = \frac{m}{n} \log a.$$

(3) Find $\text{Log} \cos 80^\circ$.

3. Perform the following operations by means of logarithms:

(1) Divide 416.64 by $\sqrt{628640}$.

(2) Find the value of $\frac{(25)^{-2} \times \sqrt[3]{.072}}{(527.59)^{10}}$

4. Having given

$$L \sin 28^\circ 21' = 9.676562,$$

$$\text{Difference for } 1' = 234,$$

$$L \tan 61^\circ 39' = 10.267952,$$

$$\text{Difference for } 1' = 302,$$

Find (1) $L \cos 28^\circ 21' 20''$; (2) $L \sin 128^\circ 18' 30''$;

(3) the angle the Log of whose secant is 10.055469 .

5. Prove

$$(1) \tan A = \sqrt{\sec^2 A - 1};$$

$$(2) \cos \theta = \cos (2n\pi + \theta).$$

$$(3) \cos^2 \theta - \tan^2 \theta = \frac{4}{\tan 2\theta \sin 2\theta}.$$

6. Prove the following, when $A+B$ is less than 90° , and without assuming the formulæ for $\sin (A+B)$ and $\cos (A+B)$:

$$(1) \tan (A+B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}.$$

$$(2) \cos 2A = 1 - 2 \sin^2 A.$$

7. If $\tan A$ and $\tan B$ be the roots of the equation

$$x^2 - 4nx + 1 = 8n,$$

$$A+B = 2 \tan^{-1} 2^{-1} \text{ or } = 2 \tan^{-1} (-2).$$

8. In any triangle ABC , prove the following formulæ:

$$(1) \frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}.$$

$$(2) \tan \frac{1}{2} A = \sqrt{\frac{(s-b)(s-c)}{s(s-a)}}.$$

If AD bisects the angle A , and AE is drawn perpendicular to the base BC , shew that

$$\cos DAE = \frac{b+c}{a} \sin \frac{1}{2} A.$$

9. Having given

(1) $b = 103.5, c = 520.14, C = 90^\circ$, solve the triangle.

(2) $a = 388.88, b = 189.20, C = 91^\circ 48'$, find A, B and c .

10. If $\sin \beta - \cos \alpha = a$
 $\sin \alpha - \cos \beta = b$

$$\text{shew that } \tan \frac{1}{2}(\alpha - \beta) = \frac{a-b}{a+b},$$

$$\text{and } \sin(\alpha - \beta) = \frac{a^2 - b^2}{a^2 + b^2}.$$

11. A person finds the elevation of the bottom of a flagstaff on a tower to be 80° ; receding 60 feet up a hill, which is inclined 24° to the horizon, he finds the elevation of the top of the staff to be 80° ; shew that the length of the flagstaff is 56.050 feet.

NUMBER.	Log.	ANGLE.	Log.
20000	80108	$\tan 78^\circ 31'$	10.69241
30000	47712	$\sin 88^\circ 12'$	9.99979
62864	79494	$\text{cosec } 68^\circ 42'$	10.08071
41664	61976	$\tan 24^\circ 36'$	9.66067
24918	89651	$\tan 44^\circ 6'$	9.98645
50974	70785		
10850	01494		
52758	72229		
88838	58926		

SOLUTIONS.

1. $2^x = N = 8^{41.664} = 2^{124.992}$; $\therefore x = 41.674 \times 8$, and $\log x = 2.09688$.

2. (1) and (2) book-work. (3). $= \frac{1}{2} \log 8 - \log 2 + 10 = 9.08758$.

3. (1) $.52758$.

$$(2) = \frac{\left(\frac{1}{25} \right)^{-2} \times \left(\frac{2^3 \times 3^3}{10^3} \right)^{\frac{1}{3}}}{(527.59)^{10}} = \frac{2^{11} \times 3^2}{(527.59)^{10} \times 10}, \text{ the log.}$$

of which appears to be 25.40851 , the number corresponding to which is not given, 89651 having evidently been the logarithm obtained.

4. (1) $A = 28^\circ 21' 20''$. $L \cos A = \log \cos A + 10 = \log \sin A \cot A + 10 = \log \sin A \tan (90 - A) + 10$; $\therefore L \cos 28^\circ 21' 20'' = \log \sin 28^\circ 21' 20'' + \log \tan 61^\circ 88' 40'' + 10 = 9.94481$.

(2) $L \sin 128^\circ 18' 80'' = \log \sin 2(61^\circ 89' 15'') + 10 = \log 2 \sin 61'' \&c., \cos 61^\circ \&c. + 10 = \log 2 + \log \cos 61^\circ \dots \tan 61^\circ \dots + \log \sin 28^\circ 20' 45'' + 10 = \log 2 + \log \sin 28^\circ 20' 45'' + \log \tan 61^\circ 89' 15'' + \log \sin 28^\circ 20' 45'' + 10 = 9.922066$.

(3) $10.055478 = L \sec A = \log \frac{1}{\cos A} + 10 = -\log \cos A + 10$; $\therefore L \cos A = 9.944531$. Now by (1) $L \cos 28^\circ 21' 20'' = 8.944491$; also it may be shewn in the same way that $L \cos 28^\circ 21' = 9.944514$; \therefore difference for $20'' = 28$, and $A = 28^\circ 20' 45''$.

$$5. (3) = \frac{\cos^2 \theta - \sin^2 \theta}{\sin^2 \theta \cos^2 \theta} = \frac{4(\cos^2 \theta + \sin^2 \theta)(\cos^2 \theta - \sin^2 \theta)}{4 \sin^2 \theta \cos^2 \theta} = \frac{4 \cos 2\theta}{\sin^2 2\theta} = \frac{4}{\tan^2 2\theta \sin 2\theta}$$

7. From Theory of Quadratics $\tan A \tan B = 1 - 3n$, $\tan A + \tan B = 4n$, $\therefore \tan(A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B} = \frac{4}{3}$.

$$\text{Also since } \tan(A + B) = \frac{2 \tan \frac{A+B}{2}}{1 - \tan^2 \frac{A+B}{2}}; \therefore \tan \frac{A+B}{2} = \frac{-1 \pm \sqrt{1 + \tan^2(A+B)}}{\tan(A+B)} = \frac{1}{2} \text{ or } -2; \text{ and } \frac{A+B}{2} = \tan^{-1} \frac{1}{2} \text{ or } \tan^{-1}(-2).$$

8. (3) True if $\frac{\cos DAE}{\sin \frac{1}{2} A} = \frac{b+c}{a}$, if $\frac{\sin ADB}{\sin DAB} = \frac{b+c}{a}$, if $\frac{C}{BD} = \frac{b+c}{a}$, if $\frac{a}{BD} = \frac{b+c}{c}$, if $\frac{DC}{BD} = \frac{b}{c}$.

9. (1) $a=509.74$ {use $a = \sqrt{(c+b)(c-b)}$ }, $A=78^\circ 81'$, $B=11^\circ 29'$.
(2) $A=68^\circ 42'$, $B=19^\circ 80'$, $c=416.64$.

$$10. (1) a^2 - b^2 = \left(-2 \cos \frac{\alpha + \beta}{2} + 2 \sin \frac{\alpha + \beta}{2} \right) \sin \frac{\alpha - \beta}{2}$$

$$a + b = \left(-2 \cos \frac{\alpha + \beta}{2} + 2 \sin \frac{\alpha + \beta}{2} \right) \cos \frac{\alpha - \beta}{2}; \text{ and divide.}$$

$$(2) a^2 - b^2 = -\cos 2\beta + \cos 2\alpha + 2 \sin(\alpha - \beta)$$

$$= -2 \sin(\alpha - \beta) \sin(\alpha + \beta) + 2 \sin(\alpha - \beta)$$

$$a^2 + b^2 = 2 - 2 \sin(\alpha + \beta); \text{ divide}$$

11. From triangle formed by drawing a line from bottom of staff parallel to the hill $\frac{x}{60} = \frac{\sin 54^\circ}{\sin 80^\circ}$
 $\therefore x = \frac{1(1 + \sqrt{5})}{2} \times 60 = 56.050 \dots$

Practical Department.

HOW CHILDREN SHOULD BE TAUGHT TO READ.

MR. EDITOR,—Believing that no subject is so badly taught in the schools of Ontario as Reading, I propose, with your permission, to conduct a discussion in your columns on the methods of teaching it with a view of learning which of them is the simplest and most philosophical. During the past two years, I have had the honor of advocating at the Provincial Teachers' Convention, and at several County Conventions, a self-consistent phonic system; that is, a system which gives the child the sounds and powers of the letters at once, and at first gives it but ONE SOUND FOR EACH. During the past year, Professor Meiklejohn, of the University of

St. Andrews, has published a little work, advocating precisely the same system. This *One Sound System*, I purpose to expound and defend.

With reference to other systems of teaching reading, my position will be friendly to the various phonetic methods; respectful to a sentence method as an introduction to the process of learning to read; indifferent to the alphabetic method (if there can be such a thing) and decidedly antagonistic to the word method as understood and taught in Ontario.

I hope that every statement I make may be fairly criticized, and if necessary corrected. I desire to reach the truth, and I am quite willing to be hurt a little while climbing.

JAMES L. HUGHES, P. S. Inspector.

[We will gladly open the columns of the JOURNAL for the discussion of the subject proposed by Mr. Hughes.—Ed.]

Before attempting to explain the method by which I think the Phonic System should be taught, I think it desirable to deal with the

OBJECTIONS

which are urged against it. This will, I hope, lead many of my readers to enter upon the consideration of the subject unprejudiced by the misrepresentations which have been made concerning it. It is held,

1. *That it cultivates the ear rather than the eye.*

This objection is urged through a misconception of the system, resulting from its name. The Phonic System does not cultivate the ear at the expense of the eye, but in harmony with it. The eye is used as much by the Phonic System as by any other system. Whatever may be the method by which reading is taught, the forms of the letters and of the words they make, must be conveyed to the brain in some way; and the most convenient way for all but blind persons is through the eye. The eye must be thoroughly trained to see accurately, and to distinguish slight differences in form readily, in order that rapid progress may be made in learning to read by any system. That the Phonic and Phonetic systems do not depend for their success upon mere cultivation of the ear is clearly shown by the fact that deaf mutes are taught to read aloud by these systems.

It is surely not a weakness of the Phonic System, however, but a strong point in its favor, that it cultivates the ear in addition to the eye. No one will attempt to maintain that to strengthen one faculty will weaken another, or that to render one acute will blunt the other, providing that both have sufficient exercise. Childhood delights in the exercise its faculties, because by activity these faculties attain their growth and power. The more of its faculties called into action by any work or play, the more intense and lasting will be the interest of the child. In fact, the eye, the ear, the hand, and every mental and physical power of the child should be used as far as possible in teaching to read.

2. *"There are so many irregularities in the Notation of the English Language that a child must be confused by the Phonic System."*

As the Phonic System has generally been taught, this is a valid objection, so far as teaching how to read the English language is concerned. There are "two malformations which infest our speech" to such an extent that neither the eye nor the ear can become a reliable guide in reading it. If a child is even introduced to a primer which contains only the words which he speaks correctly, and whose meaning he fully understands, he will find the same letter representing so many sounds, and the same sound represented by so many letters, that he must be perplexed beyond measure by the incongruous mixture. Professor Meiklejohn, in his remarkable little work, "The Problem of Teaching to Read," published by Chambers, sums up a bill of indictment against our English notation as follows:

"The eye is trifled with, and a multitude of confusing appearances presented to it; and so the attention and the memory of the child are weakened from the very outset."

"The ear is not kept faith with: the child has to give different sounds to the same symbol; what sound to give is always a question with him; and so his judgment is puzzled. An alphabet of 26 letters is made to do the work of 45 sounds. In this alphabet of 26 letters, there are now only 8 true and fixed quantities. The remaining 18 have different values at different times and in different positions, and sometimes they have no value at all. In other words they have a topographical value. Some of these 18 letters, do—in addition to their own ordinary work—the work of three or four others. A vowel may have from 20 to 30 functions in our English notation; a consonant may have two or three. There are 104 ways of representing to the eye 13 vowel sounds. Six of these vowel sounds appropriate to themselves 75 ways of getting printed."

Certainly if the child had to be brought into contact with this mass of contradictions at the beginning of his experience in learning to read, there would be no perfect system of teaching him. Even then the Phonic would be of most use to him, but it would have to be hedged in and bolstered up by so many special rules and bewildering exceptions, that it would be of comparatively little value.

It is not necessary, however, to perplex him with any of the inconsistencies of the language at the outset of his arduous labor. Give him but one sound or power for each letter or combination, and let his first primer contain only words in which the given sounds occur.

It is not a very difficult matter to prepare a series of many interesting lessons in a *one-sound alphabet*. With these lessons the pupil will easily learn the, to him, wonderful fact that printed marks may represent the words which he speaks. He will advance step by step with the most perfect confidence, and will in a few weeks have completed his first primer. He finds the present always in harmony with the past, and the knowledge gained is always available for practical use in the acquisition of more. Having mastered a primer in a *one sound alphabet*, there is little left for him to do; association of ideas, the connection of words in simple sentences, will do the rest.

3. "There is not time in an ungraded school to teach reading by the Phonic System. It requires too much practice." This objection is based upon the incorrect assumption that it takes longer to teach by this than by some other method. Whatever be the time allotted to reading on the time-table of any school, be it five minutes per day or forty, I hope to be able to prove that the progress made will be more rapid and more thorough by the Phonic than by any other system.

4. "Poor teachers cannot succeed in teaching by the Phonic Method." This may be an argument against poor teachers, but not against any system of teaching reading or any other subject. In answer to this objection it will only be necessary to state: 1. That all who can learn to teach at all, can learn to teach reading by the Phonic System; 2. That the teacher has really less work to do in teaching by the Phonic than by any other system, as the pupils are rendered more independent by it than by any other from the very beginning.

Further objections will be thankfully received.

The complete record of the Caledonia High School for the last year shows that three passed the Matriculation in Arts at Toronto University Board examination, six passed the the third-class examination, and nineteen passed the intermediate.

ELOCUTIONARY STUDIES.

BY RICHARD LEWIS, PROFESSOR OF ELOCUTION, TORONTO.

The Trial Scene—Merchant of Venice (Concluded).

The interest of this wonderful scene seems to reach its climax when Portia enters. The catastrophe is about to be consummated. The Jew has so ably replied to every objection, that we momentarily expect the dreadful termination. Antonio must die, the victim of the implacable revenge which has swept away all legal opposition to its thirst for blood; and probably the feeling of the court is that the interruption caused by the appearance of a mere stripling as the advocate for the doomed man will only add to his tortures by exciting hope where despair had given the fortitude and the calmness which mercifully accompany the inevitable. It almost rises like some rude interruption that violates the solemnity of a death-bed scene. But the magician whose wand can transform horror into confidence and hope is Shakespeare, and the young and learned doctor is Portia. Mrs. Jamieson, in her "Characteristics of Women," has produced a charming analysis of Portia, rich in its fervid conception and poetry, and beautiful in the sympathy and admiration which one gifted woman feels for another. Hazlitt formed a very opposite estimate. "Portia," he says, "has a certain degree of affectation and pedantry which is very unusual in Shakespeare, but which perhaps was a proper qualification for the office of a civil doctor, which she undertakes and executes so successfully." This harsh criticism should not guide us for a moment in our conception of the character. Hazlitt was subject to fits of despondency and moroseness, which he strengthened by recourse to copious draughts of immoderately strong tea, under the influence of which he probably flung off this savage judgment. His description of Juliet, written perhaps under the inspiration of some more generous libation, and fully equal in its eloquence to the description of Portia by Mrs. Jamieson, would in many respects apply to Portia. At least it would be more just to the tenderness of her nature and the sincerity of her purposes. Probably there is an aspect of pedantry betrayed in her anxiety to play the "learned doctor" before the chief magistrate of the republic. But it is so slight, so eclipsed by the very spirit of mercy that animates her and prompts the "heavenly eloquence" of her immortal speech, that it is impossible to conceive of affectation in a soul so deeply and tenderly moved, and inspired with the high purpose of saving a life which she so much honored. The student must understand also that Portia was not moved by any vindictiveness towards the Jew. She wishes to be just and merciful. She appeals to his humanity, and, failing utterly in that, she appeals to his cupidity, and offers him thrice the money due. She wishes to spare him the heavy penalties which she knew would fall upon him if he persisted in having his bond.

In reading any dramatic scene where characters have to be impersonated, it is not necessary that the reader should imitate the voices of those characters by unnatural efforts. All that is demanded is that the reader shall speak the part of Portia with a gentler, softer, more womanly quality—the part of Shylock in deeper, stronger, and occasionally harsher tones of voice.

Portia puts the question:

"Is your name Shylock?"

Shylock answers:—"Shylock is my name."

But the method of giving this answer must be strongly characteristic. The feeling of the Jew is that of contempt for the stripling who has dared to interrupt the course of justice, so clear, as it appears to Shylock, that it only now needs its final consummation.

He therefore glances contemptuously at the young judge, and gives his answer in slow, sullen and measured tones.

PORTIA.—Of a *strange* nature is the suit you follow;
Yet in such rule | that the *Venetian law*
Cannot *impugn* you | as you do proceed.—
You | stand within his danger, do you not?

ANTONIO.—Ay, so he says.

PORTIA.—Do you *confess* the bond?

ANTONIO.—I do.

PORTIA.—Then *must* the Jew be *merciful*.

These words are delivered earnestly and tenderly, for Portia appeals to his humanity. But the Jew is stern and unrelenting. His self-esteem, and the certainty that the Venetian law cannot impugn him, rise in fierce antagonism to that "must." Hence, scorn and defiance are flung into his repetition of "must." It demands the full arbitrary emphasis, which is expressed by a slight pause after compulsion, with full force and a prolonged downward inflection on the special word. This was the reading of Edmund Kean. Before his time, the actors gave the emphasis to "compulsion;" but Kean, with a juster conception of the Jew's state of mind, introduced the above reading; the theatre applauded, —for theatrical audiences then were able to appreciate a new reading, and the critics at once confirmed its truthfulness and force.

SHYLOCK.—On what compulsion | *must* I? Tell me *that*.

There is always the tendency to recite hackneyed passages introduced into every book of "Selections for Reading," in the usual hackneyed declamatory form. Let the reader forget all such "school" methods, conceive all the circumstances—a gentle and gifted woman, pleading with all the fervour and tenderness of her sex for the life of a fellow-creature, appealing to one whom she yet believes to be susceptible to pity,—and the first qualification for reading the speech on *Mercy* will be secured. Tenderness and earnestness pervade the delivery of the first lines; but, as Portia advances in her appeal, she is inspired with the zeal and faith of a saint, and the chords of feeling touched by a religious passion pour forth a heavenly music, breathing angelic strains which, in the delivery, demand the highest solemnity of aspect and tone, and the deepest expression of religious reverence.

"The quality of *mercy* || is not *strained*"

(That is, it is not forced on compulsion);

"It droppeth | as the gentle rain from heav'n |
Upon the place beneath.—It is *twice* | bless'd;
It bleaseth him that *gives* | and him that takes:
'Tis mightiest | in | the mightiest:—it becomes
The throned monarch | better than his crown;

His sceptre | shows the force | of *temporal* power,
The attribute | to awe and majesty,

Wherein doth sit | the dread proud *fear* of kings."

The last two lines must be read in a deeper pitch than the preceding lines. A similar depth of tone should also mark the succeeding lines; but the religious solemnity and fervor pervade the expression, and the speaker becomes more animated as she is inspired by the grandeur of the sentiment.

"But *mercy* | is *above* | this *sceptred* sway—
It is enthroned in the *hearts* of kings,
It is an attribute | of God | *himself*"

(Read this line deeper and slower as if overpowered by the awfulness and sanctity of the thought),

"And earthly power | doth *then* | shew likest God's
When mercy seasons justice.—Therefore | Jew |
Though justice be thy plea | consider *this* |
That | in the course of *justice* | none of us
Should see *salvation*—we do *pray* | for *mercy* |
And that same prayer | doth teach us | *all* | to render
The *deeds* of mercy."

I have followed with very slight additions the markings of Mr.

George Vandenhoff for the pauses, inflections and emphasis of this passage. I know of no living authority higher than that of this accomplished elocutionist for the guidance of the student, and the correctness of his markings will be fully supported by every reader who carefully examines the nature of the sentiments and understands the principles involved.

But the eloquent appeal of Portia utterly fails in moving Shylock, and sustaining the stern and scornful expression which had marked his first answer, he replies:

SHYLOCK.—"My deeds upon my head! I crave the *law*,
The penalty and forfeit of my *bond*."

The passages that follow have no special difficulty, saving that Bassanio is warmed and excited in his anxiety to save his friend, and that excitement passes into the highest indignation in delivering the line—

"And curb this *cruel* DEVIL | of his *will*."

The answer of Portia is given with judicial calmness. Surely this does not betray the "pedantry" of which Hazlitt complains. It confirms the logic of Shylock, and wild with the triumph which this accession of legal sanction brings to his cause, he pours forth his approval in a spirit of uncontrollable joy.

SHYLOCK.—A *Daniel* come to judgment! Yea, a DANIEL,
O wise, young judge, how I do *honor* thee.

The manner of the best actors in delivering these lines is to mark the first line with enthusiasm, and then in giving the second line to bend in obsequious reverence before Portia.

PORTIA.—I pray you, let me *look* | upon the bond.

SHYLOCK (*with hurried anxiety to please*).—Here it is, most
reverend doctor, here it is.

The tone of uttering this passage, especially "reverend doctor," must be marked by an excess of flattering servility. As it is not genuine on the part of Shylock, it must from its nature and his inflexible character be overdone, and transparent in its hypocrisy.

PORTIA.—There's *THRICE* | thy money | offered thee.

SHYLOCK.—An *oath*, an OATH, I have an *oath* | in *heaven*:
Shall I lay *PERJURY* | upon my soul?
No, not for *Venice*.

It is quite possible to believe that Shylock was sincere in his religious regard for his oath. To him there was nothing wrong in the pursuit of vengeance; and therefore this passage is delivered with hands and eyes uplifted, and with an expression of solemn reverence, as if the speaker trembled as he contemplated so heinous a sin as that of perjury. When Portia says:

"Be *merciful*:"

Take thrice thy money; bid me *tear* the bond,"

she holds the bond in her hands and is about to tear it, when Shylock arrests her act of mercy, and in the speech that follows he resumes much of his native sternness and dignity.

SHYLOCK.—When it is *paid* | according to the *ténour*—
It doth appear | you are a *worthy* judge; —
You *know* the *law*; your exposition |
Hath been most *sound*.

Let the manner now become sterner and more dignified, warming however into passion towards the conclusion.

"I charge you *by* the law,
Whereof you are a well-deserving pillar,
(*slightly obsequious*)
PROCEED TO JUDGMENT. By my soul | I *swear* |
There is no power | in the tongue of *man*
To *alter* me. I stay here | on my *bond*."

The delivery of this oath must be slow and deliberate, marked by the fierce resolution which betrays the hatred that prompts it, yet controlled so as to suppress violence or rant. It is the skilful management of the conflicting passions involved that distinguishes

the great actor, and gives to his reading the force and reality of nature, and the commanding impressiveness and beauty of tragic poetry.

The details of preparation that mark the brief speeches of Portia again may have the aspect of pedantry,—but whoever has witnessed the performance of the play knows how these brief details sustain suspense and strengthen the interest and the terror of the scene.

PORTIA.—Therefore lay bare your bosom.

We may easily conceive how with womanly delicacy, and shrinking from a sight of pain, Portia would utter these words, her voice low, her face averted so as not to witness the dreadful act. But here Shylock loses all self-control in the expectation of gratifying his revenge.

SHYLOCK.— Ay, his BREAST:
So says the bond: doth it not, noble judge?
Nearest his HEART: those are the very words.

The best effect will be given to the delivery of this passage by speaking the words "Ay, his breast" and "nearest his heart" with an expression of the fiercest desire, flung especially into the words "breast" and "heart," while in the references to the bond and the appeal to the judge, the manner and tone are instantly changed to an obsequious regard for forms of law, as if they only were the motives and guides of his action. It is this contrast which gives the finest dramatic effect to the passage.

PORTIA.—It is so. Are there balance here to weigh the flesh?

SHYLOCK.—I have them ready.

The question of Portia has a deep and warning meaning. It is the last effort of mercy put forth to save the Jew from the penalty he is invoking, for it is the exactness of the weight of flesh that saves Antonio.

When every preparation is made Portia calls upon Antonio to make his final defence, and as its correct delivery is important I present it with the marks for pause, inflection and emphasis.

PORTIA.—Come, merchant, have you anything to say?

ANTONIO.—But little: I am arm'd and well prepar'd.
Give me your hand, Bassanio: fare you well!

(*Speak these words softly and with pathos.*)

Grieve not | that I am fallen to this, for you;
For herein | Fortune | shows herself more kind |
Than is her custom: it is still her use
To view | with hollow eye and wrinkled brow |
An age | of poverty; (*utter this sentiment mournfully*)
from which lingering penance |
Of such misery | doth she cut me off. (*cheerfully spoken.*)
Commend me | to your honorable wife:
Tell her the process | of Antonio's end;

Say | how I lov'd you, | speak me fair | in death;
And, when the tale is told, bid her be judge
Whether Bassanio | had not once a love.

That is, a friend, and read the passage with increasing warmth and force. The cheerfulness is then resumed, and with the aspect of humor which Antonio assumes.

Repent not you that you shall lose a friend,
And he repents not | that he pays | your debt;
For | if the Jew do cut but deep enough,
I'll pay it presently, with ALL my HEART.

But the Jew becomes impatient. He sternly demands judgment.

SHYLOCK.—We trifle time; I pray thee pursue sentence.

PORTIA.—A pound of that same merchant's flesh | is thine.

Force must be given to "pound" and "flesh," as if Portia still lingered on the hope that he would understand the condition.

SHYLOCK.—Most rightful judge!

PORTIA.—And you must cut this flesh from off his breast.
The law allows it and the court awards it.

This repetition of formal statements is not a mark of pedantry—it still indicates the desire of Portia to change by the very delay the purpose of the Jew; or by the exhibition of his relentless hatred to justify the last resource by which Antonio shall be saved. And the Jew is inflexible. With knife in hand and a brief exclamation, he rushes towards Antonio—

SHYLOCK.—Most learned judge!
A SENTENCE! Come, PREPARE!

These words are uttered with the fiercest energy. The purpose is bloody and murderous; the resolution, irresistible and overmastering, towers above all opposition. Then Portia, calmly but firmly, with a dignity and nobleness of mien that instantly revive hope and restore confidence, utters her famous judgment.

PORTIA.—Tarry a little; there is | something else.
This bond—doth give thee here—NO JOY—OF BLOOD.

This saving clause—the whole line—must be delivered slowly, as if weighing every word to make the judgment tell with more terrible effect on the Jew.

The words expressly are—a pound | of FLESH;—
But, in the cutting it | if thou dost shed
ONE DROP | of Christian BLOOD—
(Let the pause be long here, and let the judgment that follows
be given with great dignity and determination)
thy lands and goods
Are, by the laws of Venice—CONFISCARE |
Unto the state of Venice.

SHYLOCK.—Is that the law? (*Half whisper and tremor.*)

This question must exhibit the terrible agony, the revulsion of feeling, which now overwhelms the Jew. It is not simply doubt—it is terror uttered with bated breath—a very sentence of death has been passed upon the Jew. He stands in dreadful suspense—the knife, the scales fall from his hands—he is defeated and prostrated by a judgment so unexpected, so unavoidable. He exhibits a sordid abjectness when he appeals for the "Principal." The collapse, the reaction, the agony of his defeat are at once awful and touching. These are the feelings which the reader must impersonate and realize if he would dramatically represent this unique and wonderful creation of Shakespeare.

The last words he hears as he leaves the court are the taunts and mockery of Gratiano. He does not reply, but he is supposed to turn slowly towards his tormentor as he is departing, to give him one look of withering scorn, and then to leave the scene of his punishment. Edmund Kean's last glance has become traditionally immortal. Few living have seen it; but it is recorded as being beyond description, withering and defiant. The writer has seen the younger Kean and Macready in this final act, and in both instances the facial expression and the glance of the eye were eloquent of scorn, and covered the mocker with unutterable contempt.

I cannot retire from this review without again doing what I have so often done—without urging upon the student the importance of realizing to himself the states of mind and the passions which govern these creations of the imagination. Froude says that "where the poet would create a character he must himself comprehend it first to its inmost fibre." Shakespeare did this. He became every character his imagination summoned into his presence. He sat as a king enthroned, beholding the beings of his fancy pass in review before him. But he did more. He stepped down from his throne. He was possessed of them as a man might be of a spirit. He felt all the tenderness and anxiety of Portia. He was moved as Shylock was moved, with the bitterness of wrong, injustice, and hatred. For the time being he was that special character who speaks. All this filled the picture with the reality and strength of life. But mere sympathy will often lead to an extravagant display of feeling.

Shakespeare understood all this, and then he ascended his throne, and reason vindicated her empire. He controlled the subjects of his ideal world, guided and governed them so that they should never pass the boundaries of truth; and thus he made them in every respect representative and human. The reader must be governed by the same laws. The habit of studying in this method will not only stamp the representation and truth, but the study itself will then foster and strengthen the imagination. The art of the reader will be a success just as he is guided by the laws which govern and mature the mind of the poet, for poetry and elocution are kindred arts, and the cultivation of the latter educates and strengthens the faculties which create the former.

HOW TO SECURE ATTENDANCE IN THE COUNTRY SCHOOL.

—G. HENRI BOGART.

DECORATION.

One of the numerous problems which vex the mind of every live, earnest teacher is, "How can I increase my average attendance?"

Now I propose giving a few methods for attaining this much-desired object. Not that I wish to set myself up as an example for my fellow-labourers to follow, but simply to give some of the methods of myself and others which I have adopted with success; and here let me remark that success here is a first requisite for success in the entire work of the school.

Who has not an image of the average rural "temple of learning" in his mind—a dim, barren, and cheerless place indeed? This will not interest nor attract your pupils; therefore as your first step you must DECORATE.

"I can't, for it would be too expensive," murmurs some Mr. Faintheart, who deserves to stick in the slough of despond during his natural life. True the poor pedagogue is not, as a rule, blessed with the superabundance of the "root of all evil," but then I'll TRY can accomplish wonders.

Evergreens go a long way in the good work. Explain to your pupils that this is *their* house, erected for their especial benefit, and you desire them to bring some evergreens to make it more pleasant, and next morning they will come laden with branches of fir, pine, and cedar.

Don't undertake to do this alone, but call in the children to aid you. This is of prime importance. You must have them interested in the work. Call their attention to the fresh appearance imparted to the room, and the grateful, spicy odor pervading the apartment. So far, so good; but this is not enough. In these days of cheap pictures every teacher should own two or three good large chromos. They will last you many terms of school, and if judiciously chosen will brighten the dull old room wonderfully, and at the same time will develop the natural latent love of *art and the beautiful* in your pupils. Ask each family represented to loan at least one nice picture for the term. Simple woodcuts, cheaply framed, produce a very pleasing effect if nestled above the cluster of evergreen over your windows. Colored crayons cost but a trifle, and your programme nicely sketched on two sheets of unprinted newspaper and hung one on either side of the desk are nice. They will last if bound by pasting strips of muslin around the edges.

Of course map drawing is taught in your school. Offer to place some extra nice piece of work on the wall as a decoration, and then notice the increase in excellence of your pupils' work in this branch. (In parenthesis we will say that we do wish the elements of general drawing were also taught in all our schools.)

But those horrid windows! The fly specks, the grim spider-webs they disclose, and the unmitigated glare of sunshine they pour in. No wonder pupils attend irregularly. I would not desire to attend school were I compelled to sit and study in such a blinding sun. By all means wash off that horrid dirt, shut out that superfluous sunshine and add to the cheer of your rooms. Very nice printed and plain cottons for this purpose can be procured at a cost of ten cents or less per yard. You may purchase them yourself and carry them from place to place as you do your pictures; but a better plan would be to lay the matter before your trustees, and if they refuse, as they will sometimes do, go to your patrons and

get them to subscribe a dime or a quarter as they may desire, and the matter of expense is soon met.

By this time your room will look very nice compared to what it did. Little shelves placed above the reach of the smaller children, to serve as cabinets for collections of botanical and other specimens are excellent.

To be sure this is not all. Many *little* things will suggest themselves to your mind for the good work when once begun. I have not spoken before (because I almost considered it unnecessary) of cleanliness. Your stove will be polished, your floor always swept clean, your desks neatly dusted, and stray cobwebs brushed away at all times.

In the work which I have thus rudely sketched you must secure the aid and co-operation of your pupils. They *must* be made to look upon it as their own own.

True teaching consists not in mere text-book recitations, but in developing all the better qualities of human nature; and how much better done when you are setting a constant example of beauty, neatness, and adaptation of means to end before your pupils! "Labor for the beautiful and the good," was the motto of an excellent instructor whom I once knew, and I wish all our teachers were impelled by the same motive.

The children will talk of your work at home you may be sure, and, drawn perhaps by curiosity, the parents will "drop in," and thus you will overcome another drawback to regular attendance. A teacher following this course will leave his mark in the homes and door-yards of his "district" for years. He has not educated the children only, but the fathers and mothers as well. And let me whisper this to you: It pays—pays you financially.

In company with others I was once visiting a very nice little district-school-house. Noting the neatness of the room, an old farmer said that they had a nice house, and intended getting teachers who would keep it nice.

Teachers, decorate your rooms; interest your pupils in your work, and children will flock to you, and stay with you.

ONTARIO MODEL SCHOOL.

MIDSUMMER EXAMINATION—1880.

Marks will be deducted in all subjects for carelessness in writing or spelling.

LITERATURE AND GRAMMAR.

FIRST DIVISION—TIME: THREE HOURS.

Values.

- 15 1. Give a brief sketch of Goldsmith. To whom did he dedicate this Poem? What was his object in writing it?
- 26 2. Explain the following:—
The young contending as the old surveyed.
Amidst thy bowers the tyrant's hand is seen.
One only master grasps the whole domain.
I still had hopes my latest hours to crown.
What hopes does Goldsmith specify?
The mingling notes came softened from below.
Quote as much as you can of this part of the poem.
To pick her wintry faggot from the thorn.
(i) How is wintry used? (ii) What fig. of Rhetoric?
His pity gave ere charity began.
There the black gibbet glooms beside the way.
Those matted woods where birds forget to sing.
In all the silent manliness of grief.
- 12 3. What figures of Rhetoric are illustrated by the following:—
When every rood of ground maintained its man.
To husband out life's taper at the close.
While, scourged by famine, from the smiling land, &c.
Do thy fair tribes participate her pain?
Even now, methinks, as pondering here I stand,
I see the rural virtues leave the land.
- 10 4. Quote, if you can, either of the similes which Goldsmith uses to illustrate the *hope of his return*, and the *Pastor's efforts to reclaim the fallen*.

Values.

- 40 5. (1) (a) Analyze:—
But times are altered, trade's unfeeling train
Usurp the land, and dispossess the swain;
Along the lawn, where scattered hamlets rose,
Unwieldy *wealth* and cumbrous pomp repose;
And every want to luxury *allied*,
And every pang that folly pays to pride,
Those gentle hours *that* plenty made to bloom,
Those calm desires that asked but little room,
Those healthful sports that graced the peaceful scone,
Lived in *each* look, and brightened all the green;
These, *far* departing, seek a kinder shore,
And rural mirth and manners are no more.
- (2) Scan lines 2, 5, 8 and 12. What is the metre, and why is it so called?
(b) Parse the words in italics. How do you explain the concord of 'train' and 'usurp'? What figure of Syntax does it illustrate? What one is illustrated by "Sweet as the primrose peeps beneath the thorn?"
Criticise each of the following, and give your reasons:—
He will in no wise cast out whomsoever come to him. —Hall.
Two and two is four and one is five.—Pope.
When the motives whence men act are known.—Beattie.
This construction sounds harshly.—Murray.
A dark and a distant future.—Chalmers.
Oh the blackest day for Scotland
That she ever knew before.—Aytoun.

Distinguish between the *Definite*, the *Indefinite*, the *Connective*, the *Attributive*, and the *Adverbial* use of the Relative in each of the following:

I met a stranger *who* greatly interested me. That is the man *who* spoke to us. I know *who* did it. He answered the question *which* was quite satisfactory. He struck the dog *which* had never done him any harm.

A little fire is quickly trodden out,
Which, being suffered, rivers cannot quench.
—Shakespeare.

SECOND DIVISION—TIME: THREE HOURS.

- 85 1. (a) Analyze, according to proper form, the following:—
A kind of change came in my fate,
My keepers *grew* compassionate;
I know not *what* had made them so,
They were inured to sights of woe.
But so it was:—my broken chain
With links unfast'ned *did* remain,
And it was *liberty* to stride
Along my cell from side to side,
And up and down, and then *athwart*,
And tread it *over* every part;
And round the pillars, *one* by one,
Returning where my walk begun.—Byron.
- 26 (b) Parse the words in italics (8). (c) Classify and conjugate the verbs in the extract, giving your reasons for the classification and the conjugation (17).
- 15 2. Inflect the *demonstrative* pronouns of the third person, and the present *subjunctive* of the verb 'grow.'
- 20 3. Write a *complete* sentence which shall contain, besides the main sentence, a compound clause and an absolute phrase.
- 15 4. (a) Give a clear definition of *Mood* and *Tense*. (b) How would you explain the three *forms* of each Tense? (c) Give in form of a sentence an example of each.
- 5 5. Which inflections of the verb depend on the subject?
- 5 6. Distinguish between *Root*, *Suffix*, *Prefix*, *Derivative* and *Compound*.
- 30 7. JUNIORS—Give Etymology of *songster*, *manhood*, *depth*, *wooden*, *foolish*, *otherwise*, *withstand*, *besmear*, *fugitive*, *multitude*, *particle*, *magnify*, *prevention*, *fragile*, *transportable*.
SENIORS—Friendship, *farthing*, *hilly*, *glazier*, *withhold*, *librarian*, *doctor*, *captive*, *contradiction*, *illegal*, *malefactor*, *benediction*, *postscript*, *autograph*, *monarchy*, *sympathy*.

THIRD DIVISION—TIME:—THREE HOURS.

Values.

- 100 1. (a) Analyze, according to proper form, the following:—
Parse the words in italics.
Express in prose the idea embodied in the second stanza.
Far from the madding crowd's ignoble strife,
Their sober wishes never learn'd to stray;
Along the cool sequester'd vale of life
They kept the noiseless tenor of their way.
Yet ev'n these bones from insult to protect,
Some frail memorial still *erected* nigh,
With uncouth rhymes and shapeless sculpture deck'd,
Implores the *passing* tribute of a sigh.
- 20 2. JUNIORS—Compare the Adjectives that occur in both stanzas.
SENIORS—Assign a reason for the *Case* of each Noun.
- 20 3. JUNIORS—In what different ways is gender indicated?
SENIORS—Give at least two different rules for the formation of the plural of nouns.
- 30 4. Classify the Pronouns, and give a reason for the distinctive name of each class.
- 15 5. In what way does the subject affect the *voice* of a Verb?
- 15 6. Write a complete sentence that shall contain a clause as the adjunct to the word in the Objective Case following a transitive Verb in past tense (indefinite).

ARITHMETIC.

FIRST DIVISION—TIME: THREE HOURS.

1. JUNIORS.—Extract the square root of 1575.2961.
SENIORS—
Simplify $\sqrt{\frac{135 \times 256 \times 375}{40 \times 108 - 648}}$
2. JUNIORS.—It is 72 miles from T. to H., and A starts from T. at 6 a.m., and walks at the rate of $3\frac{1}{2}$ miles per hour, and B starts from H. at 6 p.m., and walks 4 miles per hour; at what point will they meet?
SENIORS.—At what time will they be fifteen miles apart before meeting?
3. A owes B \$1200, due in 18 months, which B offers to discount in the *ordinary* way at 12% per annum.
JUNIORS.—Determine the amount of *discount*.
SENIORS.—Find what *rate* A makes on his money.
4. If the legal interest be only 6%, what must B put on the face of his note if he borrows \$600 from A for $2\frac{1}{2}$ years, so that A may realize 9% for his money?
JUNIORS.—Calculate at simple interest.
SENIORS.—At compound.
5. Mr. D. instructs his agent to sell \$24,300 Montreal Bank stock, and invest the proceeds in Bank of Commerce. If Montreal Bank stock is quoted at 136, and Commerce at 121, and the agent charges $\frac{1}{2}\%$ for each transaction, how much stock in Bank of Commerce will D. have?
ADDITIONAL FOR SENIORS.—If the dividends are 10% and 8% respectively, how much per cent. has D. gained or lost?
6. A. can row *down* from Paris to Brantford in $2\frac{1}{2}$ hours, but it requires $4\frac{1}{2}$ hours to row back. If the stream runs 4 miles an hour, find distance from P. to B. (*Both sections*.)
7. A grocer has sugars at 5c., 6c., 10c., 12c. Find the least number of pounds of each that may be taken to form a mixture worth 8c. per lb.
For SENIORS.—If he takes 30 lbs. of the 5c. sugar and has 98 lbs. of the mixture, find the quantities of the others taken?
8. JUNIORS.—Find the cost of paper required for papering a room 15 ft. high, 30 ft. long, and 18 ft. wide, with paper 28 inches wide and 7 yards in a roll, at 30c. a roll, if $\frac{1}{2}$ an inch has to be trimmed off each side of the paper.
SENIORS.—Find the true rate of exchange between Toronto and London if the ordinary exchange is quoted at 110 $\frac{1}{2}$. B. owes £1200 in London; how much will buy a bill of exchange for that amount, if exchange is quoted at 109 $\frac{1}{2}$?

SECOND DIVISION—TIME: THREE HOURS.

- JUNIORS—Find cost of 3 tons 18 cwt. coal at \$5.87½ per ton. SENIORS—How many tons, cwt., &c., could be bought for \$95.20.
- JUNIORS AND SENIORS—Divide \$340 among A, B, and C, giving A \$2 as often as B gets \$3, and C \$4 as often as B gets \$1.
- JUNIORS—What is the L. C. M. of 13, 17, 26, 34, 52, 68, 156? SENIORS—Take the additional two numbers, 340 and 364.
- JUNIORS—If 4 men, or 7 boys, or 10 girls, can do a piece of work in 5 days, how long would it take 2 boys and 2 girls to do it? SENIORS—How many girls would be required to assist 4 boys to finish it in 3½ days?
- JUNIORS—A man has \$304.30½ to give away among some poor boys. If he gives 30½ cents to each, how many will partake of his bounty?
SENIORS—Express ¾ of a guinea as the decimal of \$14.25½.
- JUNIORS—A cistern has three supply pipes that will fill it in 3, 4 and 5 hours respectively, and two pipes that will empty it in 2 and 6 hours respectively. If all the pipes are opened at the same time, in what time will the cistern be filled?
SENIORS—What sum will pay a debt of \$1268.75 which has been at interest for 3 years and 5 months at 7½ per cent.?
- JUNIORS—How long would it take you to walk from Toronto to Hamilton (40 miles) if you take 10 steps a minute, and each step is 2½ feet.
SENIORS—Find the number of rolls of paper required to paper a room 24 feet long, 16 feet wide and 14 feet high, if the paper is 18 inches wide and has 7 yards in a roll.
- SENIORS AND JUNIORS—Find the sum of the following numbers, beginning with 45678932, 56789824, and so on, inverting one figure at a time until all are inverted.

THIRD DIVISION—TIME: THREE HOURS.

- JUNIORS—Simplify 9768-987+8679-4455-5432+8769+9999-7896+45978.
SENIORS—13495×3-768×9+473×2×3-786÷2-430÷5+7869×7.
- JUNIORS—Forty-seven boys combined to have a pic-nic. They purchased 94 oranges at 3c. each; 38 lemons at 2c. each; 4 lbs. sugar at 12c. per lb., and spent \$1.58 for cakes. How much had each boy to pay?
SENIORS—If the boys bought ice-cream too, and then each one had to pay 16c., how much was paid for the ice-cream?
- JUNIORS—A little English boy came to Toronto and he had just £1 1s. 4½d., which he changed for our money. How much did he get?
SENIORS—If he got \$13.56, how many £ s. and d. had he?
- JUNIORS—A man divided \$12600 between his son and daughter, giving his son \$724 more than his daughter. How much did he get?
SENIORS—If there were two sons and each got \$724 more than the daughter, how much did each get?
- JUNIORS—If you subtract 23 from 352 fifteen times, how many will you have left?
SENIORS—How many times may 27 be subtracted from 3300?
- JUNIORS—A doctor bought 12 lbs. of medicine and made it up into powders, each having 4 scruples in it. How many powders?
SENIORS—If the medicine cost \$2 per lb., and he sold the powders for 5c. each, how much did he gain or lose?
- JUNIORS—If it is 720 miles from B to A, and Tom starts from B and goes 4 miles an hour, and at the same time Frank starts from A and goes 6 miles an hour, how far from A will Tom meet Frank?
SENIORS—How far from A will they meet on the return journey?
- JUNIORS—Hanan won \$6000 by rowing 5 miles at Washington. If his shell went 20 feet for every pull, how much did he get for each pull?
SENIORS—What is the smallest sum of money with which I can buy sheep at \$5, cows at \$22, or horses at \$75 each? How many of each can I buy?

MENTAL ARITHMETIC.

FIRST DIVISION—TIME: TWENTY-FIVE MINUTES.

- N.B.—Write nothing but the answer opposite the sign =.
- Find result of 34562 - 34372 =

- What number will contain 245 just 245 times? =
- Toronto ships flour to Montreal with instructions to deduct both commissions and invest proceeds in tea. The commissions are 2 per cent. and 3 per cent. respectively, and amount to \$375. Find value of the flour. =
- A boy has just 5 hours at his disposal. He desires to know how far he may ride at the rate of 8 miles an hour and walk back at the rate of 3, and be in time? =
- Two men entered into a speculation by which they made \$2700. The one put in \$4800, the other, \$6000. How should the profit be divided? =
- A can do a piece of work in 5 days, B can do it in 6, and C in 8. How long will it take, if all work together? =
- How many yards of 27-inch carpet will be required for a room 18 feet wide and 25 feet 6 inches long? =
- If ¾ of a yard of cloth cost \$¾, how much will 1½ yds. cost? =

SECOND DIVISION—TIME: TWENTY-FIVE MINUTES.

N.B.—Write nothing but the answer opposite the sign =.

- Multiply 4679 by 25. =
- Multiply 3456 by 17. =
- Divide \$236 between A and B, giving B. \$16 more than A. =
- ¾ of 27 is ¼ of what number? =
- Willie can eat a pie in 3 hours, Tom, in 4 hours, Sam, in 6 hours. How long will it take all of them? =
- If I pay \$2.25 a barrel for apples, how many can be bought for \$9.75? =
- A man gave away ¼ of his money and then spent ½ of the balance and had \$93 left. How much had he at first? =
- Find the cost of 15 doz. of eggs at 1½d. each. =

ALGEBRA.

VALUES. FIRST DIVISION—TIME: TWO HOURS.

- Write in words the meaning of the expression $(abc+xy)^2$.
- Add together $5m+3n+p$, $3(m+n+p)$ and $5p+3n+m$, and obtain the numerical result when $p=\frac{n}{10}=\frac{m}{100}=1$.
- Add together $(a+b)x+(a+c)y$, $(b+c)y$, and $(c-a)x+(b-a)y$.
- Prove that $c-(a-b)=c-a+b$.
- Simplify $16-\left\{\frac{5}{4}-x-\frac{1}{4}\left(3-\frac{x}{2}\right)\right\}$.
- Prove that $a^4 \times a^3 = a^7$, and multiply $x^4+2x^3y+4x^2y^2+3xy^3+16y^4$ by $x-2y$.
- Prove that $a^6 \div a^3 = a^3$, and divide $(x^3-9x^2y+23xy^2-15y^3)(x-7y)$ by $x^2-8xy+7y^2$.
- Resolve the following expressions into factors:—
 $81x^4-1$, $(4x+3y)^2-(8x+4y)^2$, $12x^3-14x+2$.
- Solve the following equations:—
(i.) $13x-21(x-3)=10-21(3-x)$.
(ii.) $(2+x)(a-8)=-4-2ax$.
- A and B play together for \$5; if A win, he will have thrice as much as B, but if he lose he will have only twice as much. What has each at first?
- Reduce to its lowest terms
$$\frac{y^3-(2a+b)y^2+(2ab+a^2)y-a^2b}{3y^3-(4a+2b)y+2ab+a^2}$$
- Find the L. C. M. of $4(a^3-ab^3)$, $12(ab^3+b^3)$, $8(a^3-a^2b)$.
- Prove that $\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$.
- Explain fully the method of solving a quadratic equation, and solve
$$\frac{5x}{x+4} - \frac{8x-2}{2x-3} = 2.$$
- $$\left. \begin{aligned} xy &= z+y \\ xz &= 2(x+z) \\ yz &= 3(y+z) \end{aligned} \right\}$$

GEOGRAPHY.

FIRST DIVISION—TIME :—TWO HOURS.

Values.

- 15 1. Explain by diagram the occurrence of eclipses, and point out why they do not occur monthly.
- 15 2. Let us suppose a ship to have been wrecked in the Indian Ocean. If some of the wreck be found on the western coast of Norway, trace the probable course it must have taken to get there.
- 20 3. (a) What are tides? (b) Explain their cause, giving the terms used to denote the different conditions of the water? (c) Why are there not two tides every twenty-four hours? (d) Are there ever four tides on the earth at the same time? (e) Why are some "Spring Tides" so very much higher than others?
- 15 4. Draw an outline map of Asia, and give a general description of its great physical features.
- 15 5. Name the chief towns and cities along the line of the G. T. R. R., and mention the chief export from each.
- 10 6. If you desire to establish a trade between Canada and France, what would you take there and what would you bring back?
- 10 7. Name the ten largest cities of the United States, and state where they are situated.

SECOND DIVISION—TIME . TWO HOURS.

Values.

- 20 1. Name the chief exports of Canada; tell where they are obtained most abundantly, and to what country these exports are taken.
- 20 2. What natural features of Asia are on a grand scale? What are the chief exports of Asia, naming the particular part of the country whence they are exported?
- 20 3. Draw an outline map of South America. Indicate the mountain ranges and the chief rivers, and mark the position of the important cities.
- 20 4. Going west from Toronto on the G. W. R. R. to Detroit, what towns and cities would be passed, and state the name of the county in which they are situated?
- 20 5. In going from Toronto to Quebec by water, what place of importance would be passed?

THIRD DIVISION—TIME : TWO HOURS.

Values.

- 20 1. Name the seas in and about Europe.
- 20 2. Draw an outline map of North America, and mark the mountain ranges, rivers, and chief cities.
- 20 3. What are the provinces of Canada? What are the chief productions of each?
- 20 4. What waters would you sail on in going by water from the western extremity of Lake Superior to Halifax?
- 20 5. Name the chief towns and cities of Ontario, east of Toronto, and name the county in which each is situated.

HISTORY.

FIRST DIVISION—TIME . TWO HOURS.

Values.

- 8 1. Give a brief sketch of Titus, Constantine, Alaric and Belisarius.
- 10 2. Write a short life of Charlemagne.
- 10 3. Sketch briefly the history of the Third Crusade.
- 10 4. Give a short account of the establishment of the Turks in Europe.
- 10 5. Sketch briefly the rise of the Dutch Republic.
- 10 6. Give the names of the principal battles fought during the Thirty Years' War, introducing dates where you can.
- 10 7. Name the principal events in the reign of Louis XIV.
- 10 8. Write a brief life of Charles XII.
- 10 9. Name, in chronological order, the battles of Napoleon I., introducing dates where you can.
- 12 10. State the causes of the Crimean War, the principal battles fought, and the commanders on each side.

SECOND DIVISION—TIME : TWO HOURS.

Values.

- 15 1. State briefly the circumstances by which England and Scotland became united under one Parliament.
- 15 2. What was the main object of the Treaty of Utrecht, and what were its chief terms?
- 10 3. Trace the descent of George I. from James I.
- 10 4. Name the celebrated men in the reigns of George I. and George II., state for what they were famous, and write a short account of any one of them.
- 10 5. Give a short account of the rise of British power in India.
- 10 6. Name the principal battles in the American War of Independence, giving the commanders on each side, and introducing dates where you can.
- 10 7. Name the most important events in the reign of George IV. and William IV.
- 10 8. Where are the following places, and for what events in English history are they remarkable: Glencoe, Ramilies, Sheriffmuir, Prestonpans, Trafalgar?
- 10 9. What do you know of the following persons: Admiral Rooke, Somers, Wilkes, George Stephenson?

THIRD DIVISION—TIME : TWO HOURS.

Values.

- 5 1. Name the early explorers of Canada.
- 6 2. State what you know of Frontenac, Marquette and La Salle.
- 5 3. Describe the taking of Quebec by Wolfe.
- 5 4. State the terms of the Treaty of Paris.
- 4 5. Give a brief account of the Battle of Queenston Heights.
- 4 6. What is meant by *Responsible Government*?
- 4 7. Give a short account of the Rebellion of 1837.
- 5 8. Give the date of the Confederation of the Provinces. Name the Provinces added to the Dominion since Confederation.
- 6 9. Where are the following places, and for what are they noted:—Louisburg, Stony Creek, Chrysler's Farm, Lundy's Lane, Gallows Hill, Ridgeway?
- 6 10. State what you know of the following persons:—Pontiac, General Hull, Van Ranselaer, Robert Baldwin, Papineau, General Brock.

Notes and News.

ONTARIO.

THE LATE INTERMEDIATE EXAMINATIONS.

In the Markham High School, 16 candidates were sent up, and 11 passed—five in Latin, three in French, and three in Natural Science; two took Second A, four Second B, and five took a Third. This is 25 per cent. of the average attendance of the school.

Two of the pupils of Pembroke High School passed at last Intermediate Examination, one obtaining grade A, and the other an intermediate.

In Norwood High School, six passed; one in Grade A, three in B, and two in C. There were also nine who passed for Third Class.

In Campbellford High School seven candidates passed, namely, three in Grade B, and four in C.

There were seventeen candidates passed from Clinton High School; one took Grade A, eleven B, and five obtained the Intermediate.

In Waterford High School, seventeen of those sent up for examination passed, as follows: in Grade A, one; in Grade B, seven; in Grade C, nine. One or two more may be added to the list on appeal. In addition to this number, seven passed the examination for third-class teachers.

In St. Catharines Collegiate Institute, no less than fifty-one students passed, 13 in Grade A, 24 in B, and 14 Intermediate. Two former students, who while in the Institute took up first-class work, have also passed, one taking Grade B; besides eight others not immediately in connection, who obtained first-class certificates Grade C.

Ingersoll High School succeeded in passing thirteen candidates, all but one being pupils. Eight took Grade B, and five the Intermediate.

Seventeen successful candidates have been prepared in the Sarnia High School, whose standing is as follows: Grade A, two; Grade B, eleven; Grade C, four.

Out of fifteen candidates sent up from Weston High School, eleven passed, namely: one in Grade A, six in Grade B, and four Intermediate.

Pictou High School sent up eighteen candidates, of whom one passed in Grade A, five in B, and five the Intermediate.

In Caledonia High School nineteen candidates passed, namely: two in Grade A, twelve in B, and five in Intermediate.

In Niagara High School, one pupil obtained Grade A, and two passed in Grade B.

Gananoque High School passed seven candidates in Intermediate standing.

From Brampton High School twenty-two pupils were sent up, out of whom fourteen passed.

Dunnville High School passed two in Intermediate; and Cayuga High School one in Grade B.

The Collingwood Collegiate Institute succeeded in passing thirty-six candidates, as follows: fifteen in the B grade, and twenty-one in the C.

Hamilton Collegiate Institute shows thirty-four successful candidates, two A's, nineteen B's, and thirteen C's.

The Dundas Collegiate Institute passed two candidates in Grade B. In the Kemptville High School one pupil secured a second B at the recent Intermediate examination.

The number of successful candidates from Barrie Collegiate Institute in the Intermediate Examination this year is unusually large. In the examination for Third-class certificates 17 succeeded. In the First-class examination one candidate passed, and in Second-class and Intermediate 27 were successful. On the whole, the exhibit is one of the best in the Province.

In the Farmersville High School fifteen pupils passed at the recent Intermediate Examination as follows:—One in Grade A, nine in Grade B, and five Intermediate standing. To these numbers it is expected more will be added, as there are some appeals.

The Lindsay High School succeeded in passing fifteen candidates, namely, seven in Grade B, and eight Intermediate.

The Lindsay High School opened well after the vacation with about 100 pupils. They have a very competent staff of teachers, including (besides Mr. W. E. Tilley, Head Master) Mr. Carruthers, Gold Medallist in Classics (Toronto); Mr. Kemy, honor man in Modern Languages (Vic.); and Mr. Seymour, first-class Provincial Grade B and 2nd year man in Toronto University.

Fifteen pupils from the Berlin High School succeeded in passing the last examination. One took Grade A, ten passed in Grade B, and five Intermediate. None of these had passed any previous intermediate examination.

In the Morrisburg High School, one candidate passed in Grade A, two in Grade B, and six obtained the Intermediate.

In Arnprior High School, two candidates passed the recent Intermediate Examination, one gaining a Second B, the other, Grade C.

Eleven candidates from the Stratford High School passed, namely, in Grade B, seven; Intermediate standing, four.

In the Streetsville High School, three out of five of the pupils passed, two of whom received second-class; and at the examination for third-class, the school obtained three full certificates with two assistants. The present head master took charge of this school in January, when he found it in a very low state, but the above record plainly shows that he is doing his duty.

From Perth Collegiate Institute twenty of the pupils of the High School were successful in passing the Intermediate examination as follows:—Two in Grade A, eleven in Grade B, and seven Intermediate standing.

St. Mary's Collegiate Institute succeeded in passing twenty candidates at the last Intermediate Examination, as follows: four in Grade A, six in Grade B, and ten Intermediate. They were all pupils of that Institute, and none of them had passed the Intermediate examination before.

Rev. S. D. Rice, D.D., Manitoba, has been appointed a member of the Board of Education, in the place of the Rev. J. F. German, who has recently moved to Picton, Ont.

The average attendance of the Waterdown High School for the first half of 1880, has been 87.

In the Uxbridge High School two pupils wholly prepared at the school passed the entrance examination before the Medical Council, last March. Two young ladies matriculated in Arts in Toronto University, each taking honors in Mathematics, English and

French. Thirteen have passed the last Intermediate Examination, only two getting a lower grade than B, and eleven obtained Third Class County certificates.

The vacancy in the Barrie Collegiate Institute staff, caused by the resignation of Mr. Blackstock, in order to attend College, has been filled by the appointment of Mr. P. T. Lafleur, B.A., of McGill College, Montreal. Mr. Lafleur's record is a brilliant one, and he will doubtless be a great acquisition to the school. In addition to being an excellent classic, he is gold medalist in modern languages, and speaks and writes the French language as readily as English.

Mr. Wm. McBride, B.A., Toronto, formerly assistant teacher Goderich High School, and recently of London University College (England), has been appointed Head Master of Newcastle High School.

Mr. W. H. Graham, B.A., late assistant master at Dunnville High School, has been added to the staff of St. Catharines Collegiate Institute.

Mr. J. W. Reid, ex-scholar of the 1st and 2nd year, University of Toronto, has been appointed to the vacant Assistant Mastership of the High School, Weston.

Dr. May recently inspected the Niagara Mechanics' Institute Library, which had just undergone a thorough re-classification. It contains 2,600 volumes. This institute, we are glad to learn, is in a very flourishing condition.

Mr. Edward A. Stevens has been appointed Principal of Renfrew Model School.

Mr. R. P. Echlin, B.A. (Vic.), Head Master of the Caledonia High School, has resigned his position to commence the study of law in St. Catharines, and has been succeeded by Mr. Joseph Morgan, B.A. (Tor.), late first assistant Seaforth High School.

Mr. L. Harstone, B.A. (Tor.), has been appointed to the first assistantship vacated in Seaforth High School by Mr. Joseph Morgan, B.A.

Two pupils of the public school taught by Miss Dalton in Haldimand Co., succeeded in passing at the late Intermediate examination, each obtaining a B.

In the Waterdown High School the average attendance for first

half of this year was 87. In addition to the number who passed the Intermediate examination, 7 passed the examination prescribed for third-class teachers.

At a late meeting of the Parkdale School Board, Mr. Clark said it was the intention, when some adjacent ground was purchased, to plant a large number of flowers labelled with the common and botanical names, as a means of educating the children in practical botany. The Board were agreeable that the plan should be carried out next year.

NOVA SCOTIA.

The first meeting of the Provincial Educational Association of Nova Scotia, organized under Regulation of the Council of Public Institution, was held at the Normal School, Truro, on the 14th and 15th of July, under the *ex officio* presidency of the Superintendent of Education. The attendance was large and representative. The enrolled membership embraced 174 names. Besides the representation of teachers from almost every county in the Province, there were present, actively participating in the work of the Association, the Rev. Dr. Hin, Chancellor of the University of Halifax; the Very Rev. Dr. Ross, Principal of Dalhousie College; the Rev. Dr. Sawyer, President of Acadia College, Rev. Mr. Dodwell and Prof. Higgins, principal examiners, the faculty of the Normal School, and a large number of the Provincial Inspectors of Schools. Alex. McKay, Esq., Principal of the High School, Dartmouth, was elected Secretary, and Burgess McKittrick Esq., B.A., Principal of the County Academy, Sydney, Assistant-Secretary. The Executive Committee of the Association, possessing important *ad interim* powers, was constituted as follows, the method of election being by nomination and ballot: Hinkle Congdon, Inspector District No. 1; Professor Eaton, of the Normal School; A. H. McKay, Principal of the Pictou Academy; A. McKay (Secretary); C. A. Roscoe, Inspector District No. 5; Miss Hamilton (Halifax); Miss Newcomb (Cornwallis). The Superintendent of Education and the Principal of the Normal School are, by Regulation, members of this Committee.

The pupil-teachers of the Normal School, and a large number of ladies and gentlemen interested in the cause of education, were present at the various sessions of the Association.

The programme embraced chiefly the discussion and illustration of practical professional work, or of the principles which should

direct it. But little time was spent in discussing points of order or in displays of pretentious oratory.

First Session.—After a few words of explanation and welcome by the President, the Association retired to the practice room of the Normal School to witness a lesson in reading conducted by Miss Russel, of the Model School. The lesson was designed to illustrate the phonic method of teaching reading, and elicited an interesting discussion, participated in by Dr. Ross, Principal Calkin, Inspector Patillo, the President, Mr. Parker of Port Hastings, and others. The more formal exercise of this session was the presentation of a paper on "A Course of Study for the Public Schools" by A. H. McKay, Esq., Principal of Picton Academy. An outline course was submitted for inspection, and discussion thereon was fixed for a subsequent session. Mr. McKay's paper presented with great clearness the principles which should guide in the selection of studies. The *Conspectus* furnished aims at being suggestive and tentative, rather than complete and final. It makes four groups of studies. *Calisthenics, Language, Mathematics, History*; and contemplates four Common School grades, and four High School grades.

Second Session.—The first exercise of this session was an excellent essay by Principal Calkin, on "The Observing Powers." This important subject was discussed in a philosophical manner. The true aim of education is the harmonious development of all those faculties which unitedly constitute our ideal of a perfect man, and the office of the teacher is so to direct the inherent spontaneous forces and activities of the child's nature, as that his development shall be natural,—shall be an historical epitome of the development of the higher races of man. The material for the formation of thought is largely furnished through the senses. The accuracy, force, and range of our intellectual work depend on the correctness and clearness of the impressions made upon the senses. Their careful training, therefore, according to psychological principles, is of the first importance. The paper contained many practical suggestions as to how this could be effected. These principles were illustrated by a lesson in drawing, conducted by Miss Smith, of the Normal School, herself an accomplished artist; and by an imitable lesson in botany, by Miss Mary Ham'ton, of the Model School. The Association then proceeded, according to pre-arrangement, to consider the "course of study" introduced and outlined by Mr. McKay. Pertinent questions were asked by Dr. Ross, which gave the author of the course further opportunity to explain the principles according to which it was framed. Inspector Congdon correctly interpreted the feeling of the Association when he referred in grateful terms to the obligations under which all had been placed by Mr. McKay's labors. Mr. A. G. Parsons, while criticising the course on some points of detail, was in hearty sympathy with its general scope and spirit. He hoped that by proper development it might be made the means of a thorough re-organization of our high school work.

Third Session.—This session took the form of a public educational meeting in the Y. M. C. A. Hall. His Honor the Lieutenant-Governor presided. Speeches were delivered by His Honor the Superintendent of Education, Rev. Chancellor Hill, very Rev. Principal Ross, Rev. President Lawyer, and Professor Higgins. The meeting may be characterized as one of the most successful of the kind ever held in the Province.

Fourth Session.—U. D. McKenzie, Inspector District No 10, gave a thoughtful address, listened to with great interest on account of its important practical suggestions, on "School Hygiene." The relation between healthful intellectual activity and proper physical conditions was lucidly discussed, ventilation, light, cleanliness, school-building sites, precautionary sanitary measures and similar points were lucidly touched on. Mr. McKay of Picton, Inspector Congdon and others followed with pertinent remarks and suggestions.

E. H. Owen, Esq., Principal of the Lunenburg Academy, read an instructive paper on Methods of Teaching History by outlines and diagrams. Mr. Owen supplemented his remarks by presenting an original and ingenious chart, used with great success in his own school. An interchange of views followed, engaged in by Messrs. Calkin, Parker, Parsons, Elliott, Patillo, Congdon, and McKay.

Fifth Session.—Rev. Geo. U. Hill, A.M., D.C.L., Chancellor of the University of Halifax, addressed the Association on a subject which may be epitomized as the proper correlation of studies followed by a brief sketch of the history of education in Nova Scotia, and a statement of our present educational needs. The address was most eloquent and practical, and was referred to in terms of warm appreciation by those who spoke in response to its suggestions. The lesson deduced by the President from the interesting and pro-

fitable discussion thus originated, was that the true aim before us is to make our country as well educated as other countries, especially as those with which she comes into either commercial or intellectual competition.

The discussion of the proposed "Conspectus of a course of study for the Public School," was resumed and carried on at considerable length. Ultimately the following special committee was appointed to confer with the Superintendent of Education in elaborating the outline for presentation at next session: Principal Calkin, Mr. McKay (Picton), Inspectors McDonald and Patillo, and Professor Higgins.

A motion regarding text-books was briefly discussed, and the Association, after customary formal procedure, adjourned.

NEW BRUNSWICK.

The public schools throughout the Province re-opened on the 23rd of August.

Mr. Jas. Fowler, M.A., Instructor in Natural Science in the Provincial Normal School, is about to remove to Kingston, Ont., where he takes the position of Lecturer in Natural Science and Librarian at Queen's College. As a practical botanist, Mr. Fowler is widely known on both sides of the Atlantic, and has laid this Province under obligations to him by many valuable contributions to the knowledge of its flora. His removal will be regretted by many who have enjoyed his friendship and his instructions.

The fourth department (Grades VII. and VIII.) of the Model Schools at Fredericton has been placed in charge of Mr. James Vroom, of St. Stephen, in the room of Mr. R. S. Nicolson.

Before this number of the JOURNAL reaches its readers, three of the County Teachers' Institutes will have held their annual meetings, viz.: Albert County, at Harvey; Restigouche County, at River Charles; and Sunbury County, at Oromocto, all on the 2nd and 3rd of September.

The Gloucester County Institute is to meet at Bathurst on the 23rd and 24th of September, and that of Northumberland County at Chatham on the 7th and 8th of October.

The fourth annual meeting of the Educational Institute of N.B., referred to in our "Notes" last month, in some respects surpassed all previous meetings in interest and profit. A most favorable impression seems to have been made upon the public mind by the ability, earnestness and freedom that characterized the discussions, which were somewhat fully reported for the St. John press. Immediately after the formal opening of the Institute, on the evening of July 13th, Dr. Rand delivered a public address, the chief topics of which were (1) the spirit that should prompt and govern the educator, and (2) a plea for secondary education. This was an able effort, and, to quote from the press report, "was received with loud applause and warm encomiums from all who listened to it."

Mr. Principal Crockett, of the Normal School, was called upon to take a very prominent part in the proceedings of this Institute, which must have entailed an immense amount of self-sacrificing labor upon him. In the first place, as Chairman of the Committee on a Course of Instruction for High Schools, he had drawn up most carefully a detailed curriculum extending over four years of High School work, and adapted to the various conditions of towns and county districts. Printed copies of this were placed in the hands of the members of the Institute, and Mr. Crockett explained at length the general principles and leading features of the course. Then, again, on the third day of the meeting, Mr. Crockett read two very instructive and suggestive papers, the first under the title, "The Kindergarten—Does the system differ from the principles of modern education?" and the second on the Method of Instruction in the subjects of Minerals, Animal Life, and Plant Life required by the standards of the existing course. The latter was restricted, for want of time, mainly to illustrations of lessons on Animal Life.

On the same day (at the sixth session) a subject of much practical importance was brought before the Institute by Mr. Inspector Oakes, in an admirable paper followed by a variety of experiments. The subject was, "How the Instruction in Physics required by the Standard of the Course may be given in Schools without Expensive Apparatus." At the last session of the Institute, on the Thursday evening, a lecture was delivered by Dr. Bailey, of the Provincial University, in presence of a large audience. His subject, "Phases of Matter," was supplementary to that presented by him before the Institute in 1878, "Forms of Energy." The lecture was illustrated by a large number of striking experiments, for which elaborate preparation had been made, and which were very successfully performed by the professor, assisted by Mr. John Babbitt.

Two entire sessions on the second day were devoted to the discussion of the existing course of instruction for primary and advanced schools and the proposed "Course of Instruction for High Schools and High School Classes." All the speakers, with one or two exceptions, appeared to think it well that a course was prescribed. Several expressed the highest approval of the course as a whole, but pointed out certain changes which they thought might be made with advantage. Instead of a general opposition to the prescribed course, which some of the newspapers alleged to exist among the teachers, instead of the alleged restiveness under "needless restrictions and cramping regulations, a listener to these debates must have been struck with the fact that many speakers held the curriculum to be not sufficiently definite. So far from clamoring for greater freedom in the choice and arrangement of subjects, they wanted more definiteness in some of the details. It was held by some of the teachers that the course was too advanced for the country schools, and that it required too much ground to be gone over in a given time. The following gentlemen took part in the discussion: J. A. Freeze, of St. Stephen; John March (secretary to trustees), of St. John; Daniel Morrison, of St. John; John Montgomery, of Carleton; Arthur L. Belyea, of Mangerville; George S. Inch, of Milltown; W. H. Parlee, of Portland; J. M. Coyngrahame, of Fairville; A. J. Denton, of Shediac; W. P. Dole, (Inspector), of Fredericton; H. C. Creed, of Fredericton; H. S. Bridges, of St. John; G. H. Raymond, of Sursex; Dr. Rand, E. Mullin (Inspector), of Fredericton; and Mr. Principal Crocket. In the evening Mr. Crocket closed the debate, and moved the following resolutions, which were adopted after brief discussion:

Resolved—That in pursuance of the resolution adopted in 1878 and re-affirmed in 1879, in favor of secondary education, due provision should be made for the same in our school system, and that definite pecuniary grants should be made by the Legislature. (2.) That in view of the insufficiency of time at this meeting for the full and satisfactory discussion of the proposed course for High School classes, it be laid over till next session and published meanwhile.

The evening session was occupied mainly in discussing the existing regulations relating to inspection and ranking of schools. Messrs. Montgomery, Belyea, Wilbur, Coyngrahame, Parlee, Raymond, March, Denton, H. Town of St. John, Jas. R. Mace of Fredericton, E. T. Miller of Canterbury, W. M. McLean of St. John, Jas. Vroom and Jas. D. Lawson of St. Stephen, and Dr. Rand addressed the Institute upon the subject. The regulations were criticised very freely—strongly condemned by some and approved by others. Many questions asked by teachers were satisfactorily answered by the Chief Superintendent. Difficulties were cleared up, and such opposition as has existed was found to be due more to circumstances connected with the inception of the new system than to the principle of the system itself.

At the fourth session, a committee consisting of about sixteen ladies and gentlemen was appointed to take into consideration such suggestions as might be made in reference to the course of instruction, and to report to the Institute such recommendations as they think proper. This committee, after much labor, presented a report recommending a number of alterations in details of the course in certain subjects, but leaving the course as a whole untouched. After the conclusion of Professor Bailey's lecture at the closing session, the report was thoroughly discussed; portions of it were adopted, others amended or rejected, and a large part referred to the judgment of the Chief Superintendent and the Inspectors.

In accordance with a resolution adopted by the Institute in 1879, a committee was appointed subsequent to the last annual meeting, for the purpose of preparing a report on "The Promotion of Pupils in Graded Schools." This committee reported, through its chairman, Mr. D. McIntyre, of Portland, recommending that it is not advisable that a fixed formula for the grading of schools should be prescribed for all sections of the Province, but that the times and methods of carrying on this work can be satisfactorily arranged, and the interests of the schools be best served by leaving the question in the hands of the Boards of Trustees of the respective school districts. The report was adopted. Mr. March, on behalf of the teachers and trustees of St. John, invited the Institute to meet in that city next summer in the hall of the Victoria School. He assured the members of a cordial welcome, and said that arrangements would be made to provide accommodation for teachers who should come from a distance. A resolution was passed accepting the invitation, and requesting the Chief Superintendent to convene the next meeting of the Institute in St. John.

Toward the close of the meeting, a resolution was introduced by

Mr. Wilbur, with the concurrence of the Executive Committee, requesting the Chief Superintendent "to report to the Board of Education the desirability of having some recognized mode whereby the opinions of practical teachers on the choice of text-books may be from time to time formally submitted to the Board for consideration." After remarks by the mover, Messrs. Crocket, Coyngrahame and Creed, Dr. Jack and Dr. Rand, the resolution was carried.

The Institute was favored with excellent music by a choir under the direction of Prof. E. Chadwalder, organist. Among the visitors present during the meeting were the Attorney-General, Provincial Secretary, and other members of the Local Government, Judge Fisher, Judge Steadman, and several clergymen.

QUEBEC.

The midsummer holidays are now drawing to a close, and the papers are filled with advertisements of the opening of schools and academies, and educational institutions of all sorts, public and private. The teachers are, no doubt, returning with renewed health and vigour to their arduous, important, and often ill-requited labours. As a class there is none more faithful and devoted than the great body of instructors of youth throughout our land, nor is there any profession whose labors and devotion are less appreciated and more poorly remunerated, or in which the prizes even for the most faithful and talented are fewer and of less value. It is certainly not to be wondered at that so few are found to take to teaching as a profession, and so many make it merely a stepping-stone to other professions, such as law, medicine, &c., which are at once more remunerative, more respected, and secure the entrée to a higher social position. Will the profession of teacher—one that draws so largely on the energies of those engaged in it—that requires for its successful prosecution so much tact, patience, and enthusiasm—ever hold that place in public estimation that its paramount importance demands? Money is more liberally and less grudgingly spent on almost any other project than for the promotion of education. To what better end could men of wealth devote a portion of their means than to the promotion and encouragement not of superior education merely in our academies, colleges and universities, but of elementary instruction in our common schools, by augmenting the salaries of successful teachers in the new and poorer municipalities? This want is not felt so much in Ontario, where you have a national or rather provincial system of education open to teachers of all creeds, as in the Province of Quebec, where the Council of Public Instruction, is divided into two committees, one Roman Catholic and the other Protestant. Here there is no provincial system of instruction with schools open to teachers of any religious belief. The Protestants, being few in number, and scattered in small groups over the Province, experience no little difficulty in maintaining schools, especially in the poorer country districts; and as the Government grants are made not according to the taxes paid by Roman Catholics and Protestants respectively, but according to population, the latter, it is contended, pay largely and receive comparatively little of the public moneys for education. The Protestants labour under some disadvantage also in regard to the taxes levied for educational purposes from corporations and joint-stock companies. Altogether it is extremely difficult for the Protestant Committee of the Council of Public Instruction, with the very limited means at their disposal, to remunerate the teachers as their services deserve, or even to secure always a Protestant instructor, where the great majority of the settlers are of that faith. It is greatly to be desired that men of wealth, having at heart the value and importance of Protestant education in this Province, should come to the aid of the Protestant Committee of the Council of Public Instruction, within whose "exclusive jurisdiction everything relating to Protestant schools and public instruction of Protestants" is vested by law. Said Protestant committee "may receive by donation, legacy or otherwise, *à titre gratuit*, money or other property, and may dispose of the same in its discretion for the purposes of instruction, and shall possess, in respect of property so acquired, all the powers of a body politic and corporate."

To convey some idea of the miserably small salaries of some of the teachers in this Province, let the following quotation from the report of one of the Inspectors suffice: "I have 97 female teachers, and the magnificent number of one male teacher in 20 municipalities. Seventy-six female teachers receive from \$64 to \$72 salary; twenty-one a little over \$100." The foregoing extract is from the report of one of the French Inspectors, Mr. Beland.

Mr. James Mitchell, Rector of the High School, Quebec, has resigned his office in that institution.

The Faculties of Arts and Applied Science of McGill College, Montreal, meet on the 15th of September. On the 16th, 17th, 20th and 21st of the same month, Matriculation Examinations, and Exhibition-Scholarship Examinations in Classics, Mathematics, Mental and Moral Philosophy, Modern Languages and Natural Science, will be held, and on the 22nd the Lectures in Arts and Applied Science begin. For first year's students three exhibitions are offered, two of \$125 and one of \$100. For second year's students two exhibitions are offered, one of \$125 and one of \$100. For third year's students three scholarships of \$125 yearly are offered. A scholarship is tenable for two years, an exhibition for one year. By reference to the McGill College and University Calendar the subjects of competition for these scholarships and exhibitions may be ascertained, as well as all other information in regard to the Faculties and Courses of Study therein.

On the 6th of October next the Protestant Committee of the Council of Public Instruction will meet for the distribution of the Fund for Superior Education, and the consideration of other matters connected with the Protestant Education of the Province.

MANITOBA.

The examination of teachers for the Protestant Public School of the Province has just taken place. The following are the names of the candidates.

For first-class certificate, T. S. Menaray; for second-class, Miss M. Irwin, C. Martin, John Kelly, J. A. Palmer, L. Galbraith, J. A. Ingram, M. Shore, W. A. Barington, A. H. Monkman, Miss Aggie Eyres, Miss Sarah Eyres, R. Shore, Edward A. Ganatt, F. Shore, Miss L. Mallory, Miss Barber, Miss S. Koblin, Miss A. Simpson, Miss B. Merritt, A. Beamerman.

For third-class.—H. A. Stewart, Miss M. Gerrond, Miss J. A. Patterson, Miss L. Aikenhead, F. H. Feathan, John W. Daly, Wm. Graham, Miss C. Robinson, Thomas M. Barington, John Livingstone, Richard Lepsett, Miss A. Edwards, Miss Burritt, A. L. McIntosh, A. A. Stock, Miss S. York, Miss A. York, Miss Fulsher, John B. Adams, Miss McLaughlin, M. G. Abey, Miss Evans, Miss J. C. Ross, Miss Florence Burke, W. McMullen, Miss M. Patterson.

The regular quarterly meeting of the Protestant section of the Board of Education was held on the first Wednesday in August, amongst other matters the meeting adopted the following resolution, viz :

That Stewart Mulvey, Lieut. Col. Kennedy and the Superintendent, be a Committee to report upon the propriety of authorizing a suitable instrument for the infliction of corporal punishment in the public schools.

The new South Ward school-house for Winnipeg, a very fine two storey brick veneer building, will soon be ready for use.

St. Johns College School re-opened on 6th inst. The attendance is unusually large.

Manitoba College will re-open on 7th September.

Readings and Recitations.

THE SCHOOL TEACHER'S SOLILOQUY.

BY A SCHOOL MA'AM.

To teach, or not to teach, that is the question
Whether 'tis better in the school to suffer
The noise and bother of four dozen youngsters,
Or to take up arms against a sea of troubles,
And, by marrying, end them? to love—to marry
No more; and by marrying to say we end
The heart-ache, and thousand petty troubles
That teachers are heir to,—'tis a consummation
Devoutly to be wished, to love—to marry,—
To marry' perchance to be miserable, ay, there's the rub;
For in that state of wedlock what troubles may come,
When we have shuffled off our happy girlhood
Must give us pause; there's the respect,
That makes teaching of so long life;
For who would bear the anxieties of examinations,
The scorn of Model school teachers, the carelessness of trustees,
The weariness of mind and body, the criticism of inspectors,
The insolence of children, and the care
That patient teachers with us worthy pupils take,
When they themselves might their quietus make
By simply marrying? Who would all this bear,

And grunt and sweat under a weary life,
But that the dread of misery after marriage,
That untried state, into which, if you once enter,
You can never return, puzzles the girls,
And makes them rather bear the ills they have,
Than fly to others that they know not of!

BABY HAS GONE TO SCHOOL.

The baby has gone to school; ah, me!
What will the mother do,
With never a call to button or pin,
Or tie a little shoe?
How can she keep herself busy all day
With the little hundering thing away?

Another basket to fill with lunch,
Another "good-by" to say;
And the mother stands at the door to see
Her baby march away,
And turns with a sigh that is half relief,
And half a something akin to grief.

She thinks of a possible future morn,
When the children, one by one,
Will go from their home out in the world
To battle with life alone;
And not even the baby be left to cheer
The desolate home of that futuro year.

She picks up garments here and there,
Thrown down in careless haste,
And tries to think how it would seem
If nothing were displaced.
If the house were always as still as this,
How could she bear the loneliness?

REVIEWS.

THE PHILIPPICS OF DEMOSTHENES. Edited by Frank B. Tarbell, Ph.D., Yale College. Pp. xxviii and 100, 8vo. Boston. Ginn & Heath.

THE LIFE OF AGRICOLA. By P. Cornelius Tacitus. Edited by William Francis Allen, A.M., Professor in the University of Wisconsin. Pp. vi. and 64, 8vo. Boston: Ginn & Heath.

These works are creditable alike to the publishers and the editors. The texts are edited with judgment, and the notes are good, and indicate thorough scholarship on the part of their writers. The introduction which Dr. Tarbell has prefixed to the Philippics is calculated to be very useful to the student. It gives in a concise and clear form the information about the history, the constitution, the finances, the army and the navy of Athens, necessary for an intelligent perusal of the text. In many respects this edition of these famous orations is superior to every other commonly used in the country.

INTRODUCTION TO LATIN COMPOSITION. Revised and enlarged. With introductory exercises on Elementary Constructions. By William F. Allen, Professor in the University of Wisconsin. Pp. vii. and 181 to 800. Boston: Ginn & Heath, 1880.

This book is another proof of the steady progress which our cousins on the south side of the Great Lakes are making. Not only is it a creditable specimen of the printer's art, but it is also scholarly and practical. By means of the system of references employed, it may be used with either Allen and Greenough's, Gildersleeve's, or Harkness's Latin Grammar. The exercises are well graded, and neither too easy nor too difficult. We advise teachers to examine it carefully before adopting any other textbook on the subject.

NEW AND COMPLETE ENGLISH-GERMAN AND GERMAN-ENGLISH POCKET DICTIONARY. With the Pronunciation of both Languages, Enriched with the Technical Terms of the Arts and Sciences. For the use of Business Men and Schools. By Dr. J. F. Leonhart Tafel and Louis H. Tafel, A.B. Fifth edition. Pp. 874, 12mo. Philadelphia: J. Kohler, 1879.

After testing this dictionary by turning up a number of words in both parts, we have come to the conclusion that it is a trustworthy and valu-

able work, calculated to be serviceable to both English and Germans. The difficulties of the task of indicating the pronunciation of the words of one language by translation into another have been confronted by the authors with a considerable measure of success. The book is well bound and not bulky. We recommend it to those of our readers who are in want of a handy work of the kind.

EDUCATION. By *Herbert Spencer*. Messrs. J. Fitzgerald & Co., 294 Broadway, New York, have commenced the issue of what they call the "Humboldt Library." They propose to issue 24 volumes in a year, to comprise popular expositions in Science. These volumes will be cheap reprints of books not copyrighted in the United States. The price of each will be 15 cents, or 8 dollars for the 24 numbers. The fifth number contains Herbert Spencer's Intellectual, Moral, and Physical Education.

SPIRITUAL SONGS FOR THE SUNDAY-SCHOOL. New York: Scribner & Co. 50c.; sample copy, 25c. Rev. Charles Robinson, D.D. has previously issued two of the most popular music books published in America: *Spiritual Songs for the Church and Choir*, and *Spiritual Songs for Social Worship*. With the assistance of Prof. W. F. Sherwin, whose musical skill and long experience in practical Sunday-school work has rendered his help of the greatest value, he has compiled the third volume of the "Spiritual Songs Series,"—"Spiritual Songs for the Sunday School,"—and blended the three phases of church worship in one, by the common intermingling of their hymns of praise. The frivolous character of Sunday-school hymns and tunes has been a standing reproach for years. In the new book, Rossini, Handel, Mozart, Beethoven, Chopin, Flotow, Sullivan, Oberthur and the best of modern American composers have been drawn on, and the result is a collection of rich tunes allied to worthy hymns, which has never been equalled among books designed for Sunday-school use. The general appearance of the volume—the handsome red cloth binding, the tinted paper and square page—harmonizes well with the delightful interior.

SCHOOL MANAGEMENT AND METHOD. By *John J. Prince*. Publisher, John Heywood, 18 Paternoster Square, London. This is one of the most practical of the works recently issued in England for the use of young teachers. It is specially adapted for enabling young teachers to pass their professional examinations. A feature of the book is the portion devoted to giving answers to examination questions on method which have been set by the Departmental Examiners.

PRACTICAL LESSONS IN ENGLISH. By *J. M. Sill, A.M., Superintendent of Schools, Detroit, Mich.* A. S. Barnes & Co., New York and Chicago. The author claims to have given a statement of the principles of English Grammar and Composition without including the "non-essentials." The arrangement, the classification, and many of the methods of presenting the subject, will be found to be new and good. The verb is treated simply and clearly. Many common fog-banks are avoided. The mechanical execution of the work is unusually excellent.

LEARNING AND HEALTH. By *Benjamin Ward Richardson, C. W. Bardeen, Syracuse.* 15c. This is No. 5 of the School-room Classics. Among much that is extravagant non-sensical, it is a treat to read a sensible essay on brain pressure in *early education*. It is indeed a strong but temperate statement of the evil effects of doing too much work with the brain, while the body is being neglected.

THE FAULTS OF SPEECH. By *Alexander Melville Bell, Thos. Henderson, Brantford, Ont.* 30c. It is astounding how many teachers act as though they were performing their duty to their pupils while they allow them to complete their school course addicted to many serious errors in uttering their words. How any teacher can allow a pupil to continue stammering, lisping, thickness of utterance, &c., as incomprehensible on any other theory but acknowledged incompetence. Many a man's prospects in life are blighted on account of some fault of speech which his teacher should have removed. Mr. Bell can show how to do this better than any man living.

MAGAZINES.

THE ATLANTIC MONTHLY for September contains two articles of special interest to teachers: "Oxford and Cambridge," by Richard Grant White, and a review of Mr. White's "Words and their Uses and Every-day English." Among the other reviews we may direct attention to that of "Goldwin Smith's Cowper." "The Stillwater Tragedy," a novel of a high order of excellence, by Mr.

Aldrich, is completed. Mark Twain furnishes "Mrs. McWilliams and the Lightning." The student of politics will be interested by the articles on "The Political Responsibility of the Individual," and the "Progress of the Presidential Campaigns." The other contents are: "Two-score and Ten," by J. S. Trowbridge; "Sir Walter Scott," by Thomas Sergeant Farry; "The Perpetuity of Song," by James S. Fields; "La Sorleux," by Ellen W. Olney; "Unaware," by Maurice Thompson; "Intimate Life of a Noble German Family, Part I; "Women in Organizations," by Kate Gannett Wells; "Each Side the Bridge, a Dutch Painting," by Alfred B. Street; "Reminiscences of Washington, VI., The Harrison Administration, 1841," "West Wind," by Cella Thaxter; "Such Stuff as Dreams are made of," "Must," "Recent American Fiction." "The Contributor's Club." The number more than sustains the reputation of the magazine for literary excellence.

THE GENTLEMAN'S MAGAZINE for August contains another instalment of "Queen Cophetua," a serial story of a piquant and original character; "A Perished Kernel," which is a very readable account of the trial of the Earl and Countess of Somerset for the murder of Sir Thomas Overbury in the reign of James I.; "The Moon and its Folk-Lore," an entertaining and instructive article; "Rachel Felix," a sketch of the life of a famous actress; "From Cromorne to Westminster," an interesting article on some of the sights of London; "The Czarina Anno;" "In the City of the Saints," an account of a visit to Salt Lake City by Iza Duffus Hardy; "Parliament and the Press;" "Table Talk." On the whole, a varied, valuable and attractive number.

LITTLE FOLKS' READER. D. Lothrop & Co., Boston, Mass. This little periodical, which is devoted to the delectation of the juveniles, is, as usual, attractive and entertaining. The letter-press is suitable, and the illustrations are neatly engraved and humorous, as well as instructive. "Dot, the Dentist,"—a sagacious looking monkey—appears to be the "hero" of the August number, and his rueful visage distorted with pain is well delineated.

THE PRIMITIVE METHODIST MAGAZINE for Aug. '89 is well stored with useful matter. It deserves a reading beyond the bounds of the denomination to which it belongs. The table of contents indicates a word in season for all classes of readers. We especially commend the brief readings for "Sunday at Home" to all who cannot attend the sanctuary.

The September number of the *Popular Science Monthly* possesses unusual interest to teachers. The paper by Sir Auberon Herbert, is an independent inquiry into the influence of "State Education," and is devoted to the question whether it is "A Help or Hindrance?" From being a blind admirer of the system, he has been led by careful study to doubt the enormous benefits ascribed to it, and he points out its drawbacks with great force. Even the friends of State education will do well to ponder seriously this writer's reasoning. We have another curious paper on these besotted medians, superstitions which seem absolutely incredible to modern readers—it is on the "Legal Prosecutions of Animals." Animals were assumed to be responsible for acts like people, and horses, hogs, bulls, rats, and even insects, were solemnly prosecuted, and the whole judicial apparatus of society was brought to bear upon their trials and executions. "Psychogenesis in the Human Infant," by Professor Preyer, of Jena, is the ablest essay that has yet appeared on mental development in infancy. The paper contains many new observations on the mental progress of infants, and all sensible mothers who read it will find a new charm in watching the psychical growth of the wonderful little beings that are committed to their charge. It is high time that the women began to look into this subject for themselves. "The English Precursors of Newton," from the "Edinburgh Review," is the first instalment of a most interesting chapter in scientific history. Alice Hyneman Rhine writes on "Night-Schools in New York and Paris." The editor discusses "Sewage in College Education," and raps some of these institutions vigorously for their devotion to Latin and Greek, and their neglect of the sciences upon which health and life depend. There is unusual fulness in the miscellaneous departments. New York: D. Appleton & Co.

The September number of the *North American Review* contains seven articles. The first is the initial paper by M. Charnay on "The Ruins of Central America." This article is illustrated from photographs, which aid materially in the study of the text. An expedition under the auspices of the French and American Governments, of which M. Charnay is in charge, is now operating in Central America, and the explorations are likely to create an interest more profound, and to be attended with more valuable archaeological results, even than came from the researches of Champollion in Egypt. They promise a new chapter in American history that shall establish the origin of the remarkable race of which nothing but splendid ruins were left when Columbus discovered the new world. Following this article is one on "The Perpetuity of Chinese Institutions," from the pen of S. Wells Williams. The writer has been a resident in China for many years, and is thoroughly conversant with the language, institutions, and social conditions which he discusses. Gen. John W. Clappitt, the surviving member of Mrs. Surratt's counsel, writes upon "The Trial of Mrs. Surratt." The author sincerely believes that Mrs. Surratt was innocent of the crime for which she suffered death, and expresses himself feelingly. "The Personality of God" is treated by the metaphysical writer, W. T. Harris. R. B. Forbes gives some valuable suggestions in reference to steamboat disasters. The Rev. Edward Everett Hale follows with a paper upon "Impincerity, in the Pulpit," that will hardly fail to draw some protests from his brother clergymen. The number closes with a review of several recent works on the Brain and Nerves, by Dr. George M. Beard.

LITTELL'S LIVING AGE.—The numbers of *The Living Age* for the weeks ending July 10th and 17th respectively, contain the following articles: The Development of Buddhism in India, *Fortnightly*, Suicide, and the Reconstruction of Sheepfolds, *Blackwood*, What Shakespeare Learnt at School, and Diamonds, Natural and Artificial, *Fraser*; A Learned Lady of the Sixteenth Century, and The Sculptures on the Facade of St. Mark's, Venice, *Macmillan*; Henry David Thoreau, his Character and Opinions, *Cornhill*. College Life and the Empress of Russia, *Pall Mall*, Thoreau's Pity and Humor, *Spectator*, and for Fiction, "The Guinea Box," "Drunk in the Streets," the conclusion of the "Crookit Mog" and an instalment of "Adam and Eve," with the usual amount of poetry. A new volume began with July 1st. For fifty-two numbers of sixty-four large pages each (or more than 2,500 pages a year), the subscription price (\$8) is low, while for \$10.50 the publishers offer to send any one of the American \$4 monthlies or weeklies with *The Living Age* for a year, including the extra numbers of the latter, both post-paid. Littell & Co., Boston, are the publishers.

Publishers' Department.

THE "CANADA SCHOOL JOURNAL" has always maintained its position in the van of the periodical educational literature of the Dominion, and has proved itself to be, what it was originally intended it should be, a strong help to the teacher in his work. Recommended by the Chief Superintendents of Education in Canada, and spoken of in terms of the highest praise by men of learning in the United States and in England, it has preserved a tone and attained a prestige which cannot be exceeded. Its columns are replete with all that is instructive and interesting in matters appertaining to School, College and University, so that both Teacher and Professor find it a welcome monthly visitor. Feeling the importance of such a journal, the Publishers are alive to the sense of their duty, and spare no pains to keep it continually up to the requirements of the age. They have not made an addition to their well-appointed staff, which they trust will be of advantage. A gentleman has been engaged whose special duty it is to collect local matters of interest to the teachers, to attend at their public meetings when necessary, and generally to devote his time and talents to the welfare of the JOURNAL. However, as he cannot be ubiquitous, there will exist, we are sure, a reciprocal feeling on the part of the Inspectors and Teachers in the Provinces, who will be so good as to send us from time to time short reports of important matters on educational subjects occurring in their own localities, and in this manner aid the publishers in the object they have in view. It should be borne in mind that, as an advertiser, the "CANADA SCHOOL JOURNAL" possesses immense advantages, and we would strongly commend to our friends the advisability of making use of its columns in that respect when they have occasion.

The *School Visitor* says of the CANADA SCHOOL JOURNAL: "Prominent among our exchanges ranks this Journal. It is filled with readable matter. It is a mine of rich thought and ripe experience brought out by veteran educators in the Dominion and England. It has a very interesting Mathematical Department, conducted by Alfred Baker, M.A. We shall be glad to send subscriptions for our friends. It is a cheap and desirable periodical."

We are informed that "Lovell's Advanced Geography" (148 pages) will be published on the 18th instant. It will contain 45 colored maps, 210 illustrations, a number of statistics, tables, and a pronouncing Vocabulary. Price \$1.50

Mr. T. W. Bicknell, editor of the *New England Journal of Education*, in response to requests from educators in many parts of the United States, proposes to issue, early in September, a bi-monthly magazine styled "*Education*." In it will be discussed, by the leading educational writers of America and England, the art, science, philosophy and history of education, in all its phases. The general attention now paid to educational subjects by the masses of the people, the remarkable quickening of thought among edu-

cators themselves, and the earnest discussions and sharp criticisms of the press, point to the new era of a more rational as well as practical system of education for the people. What has been, is well, and, in the main, in the right direction. What is to be, will be far wiser and better. To help forward this work is the purpose of the new magazine, and the editor shall have the aid and sympathy of the best educational thought and purpose of the English-speaking people.

THE "Announcement of Pickering College for 1879-80" lies before us. A perusal of its pages leaves an impression of solid work being done within its walls with very little outside pretensions. "It was established," we are told, "by the Society of Friends for the purpose of educating young people of both sexes (irrespective of their religious denomination), and is conducted under the control of a committee of the Canada Yearly Meeting." Attached to the College are six several places of worship, besides the meeting-room of the Society of Friends, and all denominations have opportunities of attending the one indicated by the respective parents of the students. A remarkably noticeable feature of the College arrangements is the fact that no prizes or scholarships are held out as an inducement or stimulus to study. Knowledge is there represented as a prize in itself, of such intrinsic value as to be well worthy the labour needful to secure it; but although it is difficult to impress this with sufficient force on youthful minds, yet such moral suasion is exercised in the establishment that none are allowed to be idle.

The main object of the management of the College appears to be to train youth up by suitable instruction to meet the requirements of the present age in the various departments of learning, and to qualify them for entering the professions by means of special classes formed to meet the required entrance examinations of the University. The counting-house is not forgotten, it is prepared for in the most satisfactory manner through a practical teaching little short of actual business experience.

The simple yet effective rules laid down for the internal government of the College are of such a nature that the students feel themselves bound in honor to assist in supporting the system of discipline; and the idea conveyed by the general tenor of that system is "do right because it is right."

Pleasantly and healthfully situated on the border of Lake Ontario, it scarcely needs the manly training of the gymnasium and the cricket field, yet these form not the least portion of its daily routine, while the reading-room, the debating club, and the recitation class possess attractions to amuse and strengthen the mental faculties when the hours of regular study are past.

The results at last Intermediate examination show well for this College, and we wish it every success in the near future.

PERSONALS.

Mr. J. Arthur Freeze, A.B., Principal of the High School at St. Stephen, has been appointed to the like position at St. Andrews, in place of Mr. Jas. F. Covey, A.B., resigned.

—During a recent examination of a class of youngsters in one of our public schools, the teacher asked, "What is a monarchy?" and was immediately answered by an eight-year-old boy, "A country governed by a king." "Who would rule if the king should die?" "The queen." "And if the queen should die?" "The jack."