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THE ONTARIO TEACHER:

A MONTHLY EDUCATIONAL JOURNAL.

Vol. 4. AUGUST, 1876. No. 8.

EDITORIAL NOTES.

—The Teachers' Association for the County of Wentworth at their last Association, adopted a resolution in favor of a change in the school vacations, as follows: Schools to open on second day of January; Easter holidays to be abolished, and summer vacation to begin on July 1st, instead of the 16th, as at present. This is fighting it out on the right line. It is possible to have too many holidays as well as too few. We never favored the idea of Easter holidays—they only lead to a waste of valuable time, as many pupils who would otherwise continue at school several weeks, break off, and do not not feel disposed to return for a week or two of another term. Right Wentworth.

—It is recommended by the East Middlesex Teachers' Association, that Third Class Certificates be graded, grade A to be the certificate of a master and grade B assistant. It is also proposed to add to the subjects at present required from third class candidates, Algebra to the end of simple Equations, Elementary Mensuration, Euclid Book I., and Bookkeeping. In grade A, it is also proposed to require 50 per cent. of the aggregate marks in each subject. It is further proposed to abolish monitors' certificates and let their place be taken by Third Class Grade B teachers. Grade B teachers may be licensed at 16 and grade A not younger than 19 years of age, the former to remain in force one year, the latter five, with the option of writing for a second class certificate at the end of three years. It is also proposed to allow candidates to subdivide the examination work into two portions, taking a fixed portion one year and the remainder the year following. We fail to see where there is any advantage in grading third class teachers, on the basis proposed. We think it better to maintain the present course of study for third class

teachers, exact from them a rigid examination, and let them run their course. In order to prevent the evil complained of, viz : having our schools filled with beginners, instead of experienced teachers, we believe it would be much better to renew third class certificates on a higher percentage—say 75 per cent.—and to add a few more subjects to their work. The public and the profession lose heavily by so many retiring, when their third class certificates expire. All the experience gained during three years is thrown away, and "beginners" with no higher qualification, and without any experience whatever repeat the blunder that those who are retiring knew well how to avoid. We think it useless, at present, to add any more subjects to the programme for third class teachers, under the present mode of examination. It is hard enough to get a sufficient number of candidates "well up" in the present programme, and what it would be if the subjects above named were added, nobody can tell. Could we only get additional Normal School facilities, and be able to get trained teachers who could communicate what they did know, we think our schools would be much more prosperous on the basis of instruction already laid down, than they now are. It is not by the number of subjects a teacher has studied, nor by the extent of an examination programme, that his usefulness is to be judged ; it is *ability* to govern a school, energy to *work*, and the power to communicate, that is wanted. This is the great evil to be remedied, and nothing but training will do this. County Institutes, Teachers' Associations, Normal Schools, newspapers, anything that will excite a love for the work and cultivate aptitude, will do more to make good teachers, than any mode of examination that can be proposed.

We don't object to a sub-division of examination work for second class candidates. The course of study is considerable, and to many who have to work alone and unaided, it would be quite an inducement to be allowed to work up half the course of study one year, and the remainder the year following. We want more second class teachers. If they could be got this way there need be no objections.

—Vice Chancellor Moss, of Toronto University, in his address to the students at the Convocation, referred at considerable length to the curriculum of studies and laid particular stress upon the study of the natural sciences and modern languages. We think it is very much to be regretted that our Universities occupy so much time in studying ancient classics. We do not wish to undervalue the great masters of classic lore, whether a Virgil, a Cicero, or a Xenophon, but we feel that much time that could be applied to the study of what would *practically* be far more useful, is often expended on what, while it may give critical discipline, gives nothing more. We are very glad to see our Canadian University, of which we are all so proud, endeavor to adapt its curriculum to the wants of this practical age. It too often happens that students, instead of acquiring a practical, or even theoretical knowledge of the sciences, exhaust their strength on Greek and Latin idioms, bid farewell to their Alma Mater just as unprepared to enter upon the duties of life as when they entered. Were the natural sciences properly and practically taught, a much more utilitarian cast would be given to the course of study. Some would become practical chemists, geologists, mineralogists, or botanists. The knowledge acquired could be turned immediately to account. We hope to see greater changes made in the direction indicated by the Vice-Chancellor, and greater attention paid every year to the study of natural science.

THE CENTENNIAL AND ITS EDUCATIONAL FEATURES.

No. 1.

Having recently enjoyed the pleasure of a brief visit to the Centennial Exhibition now in progress at Philadelphia, on the occasion of the annual excursion of the Canadian Press Association, we propose in a series of short articles, to give some hints of its educational exhibits. A sketch of the excursion itself might be given as an introduction, but as that has already been done, in the daily and weekly press, and would be of little value through the slower medium of a monthly journal, we must content ourselves with a very brief reference. The Annual Meeting was held in Toronto, on June 30, and the same day the party proceeded by steamer *Southern Belle* to Niagara; thence by Canada Southern Railway to Buffalo; and thence by Erie and Lehigh Valley Railroad, arriving in Philadelphia at 5 p.m. on the 1st July. We would recommend this route to any of our readers who may intend to visit the Centennial, as one of the very best, and the scenery along the Lehigh Valley is of the grandest possible description. The Erie Railroad Company acted throughout in the most courteous and liberal manner. Their General Western Passenger Agent Mr. W. C. Gould, accompanied the excursion throughout, returning with them by way of New York City, and did everything in his power to contribute to their comfort and enjoyment. He was tendered several hearty votes of thanks, presented with a valuable gold-headed cane, and invited to attend the next annual excursion as the guest of the Association.

The Centennial Exhibition may itself, in its entirety, be regarded as a great educational agency. Visitors from different countries cannot but be impressed with the exhibits of other nations, and will in many cases carry with them to their homes new ideas and aspirations, which will have a most important influence. The benefit of such exhibitions as great international educators can not be over-estimated, nor is it possible to calculate how far they influence the growth and civilization of the nations taking part in them. Aside, however, from such a general view, such an Exposition as the one at Philadelphia should give a *special* exhibit of the world's education, including the educational statistics of each country, its educational system, its various appliances for instruction, its several classes of schools from the lowest grade to the university, with the apparatus, books, maps, &c., used in them, and in addition to all this an exhibit, as far as it can be given, of the actual practical work of all these institutions. It is scarcely necessary to say that the Centennial falls very far below this standard. Many of the countries either have no educational exhibit at all, or else one that is very inadequate, while it may be said that very few have made as good an exhibit as they might have done. Nevertheless there is vastly more of an educational nature at this than at any previous World's Fair, and quite enough to merit the careful inspection of any one interested in education. The great importance of the subject might have suggested to the Commission the propriety of erecting a Hall specially for exhibits in this department. That however has not been done, and the exhibits of different states and countries are scattered over various parts of the grounds and buildings. As some of our readers may visit the Centen-

nial, it may useful to know where to find the educational exhibits of the several states and countries.

In the main building, in the spaces assigned to these countries, will be found the exhibits of Japan, Norway, Sweden, Ontario, Switzerland, Belgium, Brazil, and the Netherlands. The Massachusetts exhibit is in the gallery over the east end of the main building, and in the State building. In the gallery over the south entrance to the main exhibition building are the exhibits of Illinois, Indiana, Ohio, Kentucky, Maryland, New Hampshire, Michigan, Wisconsin, Connecticut. New Jersey, Rhode Island, Maine, Iowa, Missouri, New Orleans, Tennessee, Hampton, Va., and the American Missionary Association. The United States exhibit is in the Government building. The Pennsylvania exhibit, the American Kindergarten, and Froebel's Kindergarten, are in separate buildings, to the west of Memorial Hall. Russia, the Worcester Free Institute, and Cornell University have their exhibits in Machinery Hall.

(To be Continued.)

NOTES FROM A TEACHER'S JOURNAL.

BY WILL WRIT.

VI.

(Continued.)

February 19th.

Two weeks ago I made the suggestion that the pupils should hand in written questions on any subject of general interest, to be publicly answered—questions on the phenomena of every-day life preferred. The first few days they ran 70 or 80 per day; but, as the novelty wore off, the number diminished somewhat. By a few suggestions on my part, and by answering frivolous questions with silence, I have made the exercise a means of imparting much useful instruction; and we could not stop the practice now without a protest from all sides.

March 28th.

My "news-class," as we now call it, has steadily increased in interest during the winter. The arrival of the week's papers is eagerly hailed in the various homes, and on Monday the world's news of the previous week are pretty thoroughly ventilated. All Geographical references are looked up, and the effect is very apparent in the Geography class. Another benefit which is already apparent, is the improved facility which some of them evince in finding news. There are people who, after having a paper in their hands for an hour, do not have an idea of what is in it; while another person will in a few moments glance a paper over, discriminating between important and unimportant matter, gleaning news, and determining whether there is anything more lengthy worth subsequent perusal. One of the best evidences of intelligence is fluency in conversation on current events; and the acquaintance therewith, if had at all, must be had by most people from the reading afforded by a few leisure moments now and then. Hence the importance of being able to glean rapidly from the columns of a newspaper, separating the wheat from the chaff, in half the time that thick-headed

people need to discover that they don't want the chaff.

April 25th.

To-day as the Second Reader class were wending their toilsome way through the reading lesson the name of Herod occured, when a little girl held up her hand and wanted to know whether that was the same Herod who had his head cut off because he couldn't dance! That was her version of the story of Herodias' daughter's dancing and John the Baptist's head.

April 26th.

To-day at noon some one took an apple belonging to some one else, and after eating part of it, set the piece back in its place. The owner of the apple complained, but no one knew anything about it. When school was called I asked all who knew nothing of the matter, to rise. All arose. I then examined the apple and found that the toothprints were very peculiar—so much so as to afford a certain means of detecting the culprit. I then informed them of my discovery and also of my intention to examine the front teeth of every one. This caused a general laugh except from one little girl who began to look decidedly uncomfortable, matters having taken a somewhat unexpected turn. However, I would give all one more chance. I again told the innocent to rise. Still all arose. The extreme course must be taken. I passed from one to another and looked at every mouth. Some submitted as to a good joke, others gravely, still others nervously and anxiously. The little girl above mentioned could scarcely be prevailed upon to open her mouth at all. One glance was enough. The marks corresponded exactly. Still I betrayed no sign of having found the offender, but went the whole round. When I was through I was still more confirmed; there were no other mouths in the house that had the slightest resemblance to the marks. I then told them I had discovered the offender, and they should make their minds easy as the proof was so conclusive that I would not suspect the wrong person. A look of relief passed over several faces at this, so sensitive are children to suspicion.

The next thing was to decide how to deal with the child. She was quite small, a mere baby, and by nature the most timid child in school. Furthermore, she had only just overcome the dislike to come to school at all. She had evidently concealed her fault out of sheer terror at the consequences of being found out; to be severe would be the means of fostering that moral cowardice which I was trying to correct; and besides would probably re-awaken the old dislike for school. To save the child was the prime object. My mind was made up. I told the school I would not disclose the name of the offender, but would deal with the case privately. And they must give me a promise not to talk the matter over and throw suspicion upon one another, "for," said I, "if you suspect the wrong one you do a great injustice, and the right one is sufficiently punished by the thought that I know about it." They gave the promise and from past experience I believe they will keep it. After the excitement in the little one's mind has had time to disappear, I will some time have a talk with her and try to win her confidence, and so get the whole story of the half-eaten apple-

METHOD OF CREDIT AND DEMERIT MARKING.

AS ILLUSTRATED BY MISS ALICE BISSELL, GRANTON, BEFORE THE EAST MIDDLESEX TEACHERS' ASSOCIATION, IN THE CITY HALL, LONDON, JUNE 9th, 1876.

A good system of giving "Credit Marks" is, I consider, a healthful stimulus to a school; and the Class Book containing a record of these marks if properly kept should show at all times the position of the scholar in the school, or in his class, and serve as a guide to the teacher in the promotions which are quarterly made. Since I have been in the profession, I have always adopted some system of Credit Marks, from the old "head and foot plan" to that which I now use.

Three marks are given at each recitation —valued, 3, 2, and 1. Those having a perfect recitation are entitled to mark 3, those failing to answer one question mark 2, and those failing to answer two questions mark 1.

After a question is given, the scholars who are prepared to answer make it manifest by the uplifted hand; they are then called upon promiscuously to give the answer. Each scholar receives his mark, not for the question that may have been given to him, but for all the questions given during the recitation. Each scholar receives a number at the close of a month according to the total marks he has obtained in that time, and he retains that number and a corresponding position in the class for the following month. There is no changing places in the class until the first Monday morning of a new month—I consider changing places during the recitation a great loss of time, and a great hindrance to good order in the class.

The marks for the week are kept on a sheet of paper prepared by dividing it into spaces for each class, and ruling a margin for the number of the pupils in the classes. At the close of a recitation the scholars that have obtained "Credit Marks," stand forward at the command 'marks, forward,' then those scholars commencing at the head give conscientiously their class numbers, and their marks for the lesson.

I find it a great advantage to have them give their class numbers instead of my calling them requiring them only to give their marks.

I seem to lose no time in recording the marks in this manner, and no more than five minutes are occupied in changing the numbers at the beginning of a month.

"Demerit marks" are given for talking or any violation of the rules of the school, and deducted from the merit marks. These marks are taken at the close of the forenoon and afternoon, and are placed on the weekly sheet and distinguished from the other marks.

The sum of the weekly marks is transferred to the class book at the close of the week. The class book is divided into six columns; the 1st for the age, 2nd, for the class number, and the 3rd for the name of the pupils. The 4th and 5th columns are divided horizontally opposite each name, so as to afford two spaces one for the merit marks and the other for the demerit marks, if any. The sum of the weekly marks is kept in the 4th column the demerit marks in space above and merit marks in space below. The totals of these is placed in 5th column, and difference between them in 6th column. From this last column a new page must be ruled in the class book as the scholars change places according to the marks shown by this last column.

At the close of the quarterly written examinat. n, after the papers have been ex-

amined by me and the mark denoting the value of each answer placed on the margin opposite to it, the papers are returned to the scholars for inspection. In the meantime I prepare a page in the class book for the reception of these marks headed the "Quarterly Result" and divided into columns for the subjects of each class. When the scholars have had sufficient time to inspect the examined papers they are called by classes, and any scholar feeling dissatisfied about his marks, arises and receives explanation. When all express themselves, each scholar gives in the total marks on the paper, which I place in the proper column on the Quarterly Result. The papers are then collected and filed, or left for the inspection of visitors with my paper containing the questions, on the outside, on which is written the word "passed." The sum of the total received on their examination papers, and the total of the monthly marks is placed in the final column of the "Quarterly Result" which I endeavor to have ready for the last afternoon of the examination, when I find visitors are more apt to put in an appearance. If distributing prizes at any time, I would give them according to this result.

SELECTIONS.

THE RESPONSIBILITY OF TEACHERS.

Fidelity to the requirements of duty is an essential element in both social and individual well-being. It lies at the foundation of all honorable prosperity, and cannot be neglected without disastrous consequence to the most vital interests. And it is as extensive in application as it is commanding in importance. It is absolute in its nature, and no power in the universe can release him from its obligation. Its demands confront him at every step he takes, and upon his prompt and cheerful obedience his happiness for time and eternity depends. But, apart from the 'absolute' responsibility thus incurred, the relations of man to his fellows are so intimate that a 'social' or 'relative' responsibility necessarily arises therefrom. This is scarcely inferior in practical importance to the other. Indeed, it may be justly doubted whether the two will admit of any legitimate comparison as to the force of their respective claims. For they are so closely connected that the fulfillment of the former must include the performance of the latter, and the claims of the latter can only be fully met by proper attention to those of the former. Hence, they may both be regarded as parts of the same rule, fidelity to which, as a whole, must comprehend obedience to each of its constituent elements.

But the *extent*, and, in some respects, the *natnre* of the latter may be modified by the circumstances of the individual. The rule does not bear with an equal weight of obligation upon every person, without respect to his condition; but it adjusts itself to the exigencies of each particular case. Position in life, talent and opportunity, are important elements to be considered in this connection. Where they are of such a character as to enable a man to exert a strong and abiding influence over his fellows, he must incur a proportionally greater responsibility than one whose circumstances are more restricted in these respects. The law, which is impartial in its operations, will hold him to a rigid accountability for the measure of influence emanating from him. This idea seems conformable alike to reason and revelation, and justifies the doc-

trine, that responsibility is measured by the influence which an individual exerts, or should exert, over others.

If this doctrine be admitted as true, it is manifest that the responsibility of teachers is very great. Indeed, it may be reasonably doubted whether any other position in life can devolve a greater. They are brought into immediate contact with the youthful mind during the formative period of its existence. To their care are committed its tremendous interests, ere yet the presure of confirmed habits is laid upon it. In its plastic and impressible state it is given into their hands to be moulded and shaped for the great future that lies before it. It is their business to train and educate it for the ways of usefulness and honor, to impart the knowledge and inculcate the principles which shall render it competent to grapple with and overcome the difficulties that coming experience may disclose. In short, it is their duty, as far as in them lies, to make a career of honorable distinction or profitable industry possible to every subject of their ministrations. A position so commanding, a relation so intimate, must, from the very nature of the case, give rise to a large measure of influence over those immediately affected thereby.

But this influence is not limited and confined to its immediate subjects. It is destined to reach beyond them to those whom they, in their turn, may affect. "No man liveth unto himself" alone, and these pupils, carrying with them into active life the peculiar training which they have received, will exert upon others an influence corresponding therewith. It is in accordance with the nature of things, that no finite being shall be able to gauge the possibilities of any course of conduct where others are concerned. As the streamlet, in its onward flow to the ocean, may expand into proportions far surpassing the promise of its beginning; so, the influence exerted by teachers, through the instrumentality of its recipients, may deepen and widen and extend, until it shall transcend the utmost limits assigned to it in thought of its originators. It is not bounded by the horizon of the present, but it has the illimitable range of the future as a field for its operations. If good, it shall prove continuously beneficial to all the interests of social and individual life; if the contrary, its effects must be correspondingly pernicious. An influence so abiding in its nature, so expansive in its operations, and affecting such weighty concerns, must carry with it a degree of responsibility which language is scarcely adequate to describe — a responsibility which challenges the most faithful attention, and demands the most diligent effort.

But the subject presents another aspect which well deserves some degree of consideration. The direct object of the teacher's effort—especially the Public School teacher's—is the training of the intellect. It is his immediate duty to impart instruction concerning certain branches of knowledge, and train the intellectual faculties to correct methods of thinking in the pursuit of this knowledge. For this he is employed, and to its accomplishment he is held bound. But this—important as it is—must not be regarded as the ultimate end of his labors; it is merely subsidiary to a higher and nobler purpose. All education that does not result in making its subjects good and virtuous, useful members of society, and honorable citizens of the State, is worse than useless. It fails in the most vital particular, and its effect is pernicious rather than beneficial. Now, all experience proves that knowledge and intellectual acuteness are of themselves utterly insufficient to secure these desirable results. Though indispensable as a means to their attainment, they must forever succumb to the assaults of temptation, unless supplemented and strengthened by a vigorous moral training, which brings into prominence the imperative duties which the individual owes to his God, to his neighbor, and to his own higher nature. The neglect of a proper moral training in combination with intellectual culture, is no doubt the fruitful source of the dishonesty, fraud and corruption which so frequently disgrace official and intelligent circles throughout the world. As the most important interest of men, both in their individual and social capacity, rest upon great moral principles, the neglect of them in any system of education, must entail destructive consequences. Now, the question arises as to the extent of the teacher's duty in this connection. It may be said with certainty that it is *not* his duty to inculcate sectarian dogmas, or assume the functions of a religious teacher; it is *not*

his duty to instill his own opinions concerning controverted views of religious belief, or attempt to bias the minds of his pupils towards this or that denomination; but it *is* his duty to exemplify in his conduct a proper regard for those great fundamental principles of moral truth, about which all good men are agreed, and upon which the safety and happiness of all so essentially depend; it *is* his duty to teach, by his example, that obedience to God, that reverence for law, that respect for honesty and virtue, which it is the ultimate aim of education to subserve and enforce. This is probably as far as his duty extends in this direction. Example is the great instrument by which he is to teach and enforce those moral truths, which it is so important for every one to understand and practice. And let no one decry its power, or contemn its influence. Though less pretentious, it is far more efficient than the wisest precepts. No finite mind can fully estimate the possibilities which may issue therefrom. If consistently illustrating the principles of rectitude, honesty and sobriety, it shall prove "a savor of life unto life" to those affected thereby; if the contrary, its effects must be deplorable in the extreme.

Thus it will be seen that the influence of the teacher extends not only to the intellectual status of his pupils, but also to their moral condition, and, as a consequence, that it most intimately concerns their highest interests so far as this world is concerned, to say nothing of the great eternity to which all are tending. How careful and diligent ought he to be, in order to meet the requirements of such a tremendous responsibility! How circumspect that no action of his may tend to impair the force of those moral principles which constitute the basis of all true excellence! For he who, in his intercourse with his pupils, violates these principles strikes a blow at their interests which no subsequent effort may avail to counteract, introduces a moral poison for which all the medicaments of the universe may furnish no sufficient antidote!

But the subject presents still another aspect which merits a passing notice. The Public School System may be regarded as being yet in a state of probation. It is passing through the crucial test of actual experiment, in order to determine its adaptation to the purposes of its institution; and although it has many warm and powerful friends, and the great majority of the people have come to regard it as almost indispensable, yet it has also numerous and inveterate enemies, whose hostility will never cease so long as there remains the most remote chance of accomplishing its overthrow. To increase the number and zeal of its friends, to disarm the rancor of its foes, and to render impregnable to all assault, a judicious and faithful execution of the trusts involved in its administration is requisite; for, however true in theory, however excellent in purpose, its practical results for good must depend upon the fidelity and efficiency of those who are intrusted with the performance of its various functions.

From the very nature of the case, the heaviest portion of this work must devolve upon the teachers. Judicious legislation, intelligent supervision, and popular appreciation, however important, are in their nature merely subsidiary; the work of the teachers is principal, fundamental, essential; and upon its character the success or failure of the system will inevitably depend. And when the teachers, in point of attainment and practical efficiency, shall equal the demands of the occasion, the success of the system will be established, its power for good developed, its hold upon the popular affection strengthened, and its permanency assured. Before the results emanating from intelligent and faithful effort, opposition must succumb, and popular appreciation become universal.

It will thus be seen that the responsibility of teachers affects various and vital interests, and in proportion to the extent of its application is its own legitimate importance. It stands forth invested with a greatness which mere words can neither depreciate nor augment. In its impressive magnitude it is the only proper exponent of its own claims, the teacher of its own obligations. Happy is he who faithfully meets its demand, and measures up to the full standard of its requirements!

It may be alleged, indeed, that the benefits accruing to teachers are not commensurate with such a formidable responsibility. But this is true only in a restricted sense; for it is in accordance with the awards of eternal justice that no faithful effort, directed to the achievement of a righteous pur-

pose, shall fail of its proper recompense. They may be poorly paid and poorly appreciated; they may frequently be doomed to see their best exertions comparatively fruitless, on account of the stupidity or perverseness of those upon whom they are exercised, and yet they are engaged in a good work; and, if faithful, they have, for the present, the abiding consolation resulting from a sense of duty honestly performed; and, for the future, they may "take heart of hope," and encourage the belief that the seed sown will yet spring up and produce the desired fruit. Under all the discouragements of their lot, these considerations may well mitigate despondency, and induce a cheerful faith in that sublime law of compensation: "He who goeth forth weeping, bearing precious seed, shall doubtless come again rejoicing, bringing his sheaves with him!" — *J. W. Halley, in Maryland School Journal.*

FROEBEL'S CHILD-STUDY AND ITS RESULTS.

Historians have traced the different grades of development in the human race—infancy, youth, manhood, and the culmination of development; and it is said to be "Froebel's undenied merit" to have recognized this fact in the life of the individual, and to have found the means to aid in this development from earliest infancy. In the plays of children of all times the being of humanity is expressed. As men first provide themselves with shelter, so the children build houses or caverns in their play. Men early in their career on earth begin to cultivate the soil; so little children love to dig the ground, and learn in a little garden how to plant, to sow, and to reap. All material in their hands, if it be only moist sand, serves for plastic formations. Eve. art will be attempted by the child, whether to make forms with chalk or pencil or delineate them in sand, whether it be the inarticulate sounds of the babe trying to become rhythmic or to imitate the crowing of the cock or the barking of the dog, until at length real musical sounds proceed from the throats of little children. These early attempts are the first beginnings of development in art. As the first elements of art and industry show themselves in the activity of children, so likewise the germs of science are exhibited in their desire for knowledge. With the often repeated questions, why? wherefore? whence? the young mind searches for the cause of all things, for truth and its source—God.

The great desire in early infancy, second only to the craving for motion in general, is the use of its hands. Nature prompts the child to use its hands constantly in play. Nothing is more contrary to nature than to forbid a child the use of its hands, yet this is always done in schools, that children may attend to the subjects taught. But Froebel, following the hint of nature, has found means to chain the child's attention by connecting all instruction given with the use of the hands. Activity is work in its true sense only when the mind guides the fingers, which merely serve to carry out its plans and combinations. The play of children is to them like work, serving to develop their limbs, organs, and senses. It is one of the axioms, "Whatever gives pleasure to children generally serves in some way for their development." The same idea, more forcibly expressed, is found in the recently published Life of Mrs. Fletcher, in a letter written by a lady in 1807; "I wish you would convince the friends of artifical and premature instruction that one hour spent in play by the children in their own way will strengthen their faculties and invigorate their minds more than twenty lessons. Those good folks never consider that when the faculties of children are exercised with most pleasure to themselves they are receiving the best lessons, and that God himself is their teacher." "The awakening of the creative spirit in children," says Mrs. Kriege, "will free the coming generation from its greediness for pleasure and excitement, which unsettles the morals of our own generation. Activity in play furnishes the elements of all knowledge, and the capacity for doing brings a connection and unity in culture,

Knowing and doing are separated in our day; theory is apart from practice, which is an evil in morals as well as in science. A key has been found to decipher and develop the child's whole being, the alphabet of which is Froebel's book for mothers." In endeavoring to rouse mothers to a consciousness of the needs of childhood which should be provided in their surroundings, which is a common omission. Froebel also felt the necessity of advising conscientious mothers who occupy themselves in educating their children without understanding the laws of their mental development, of the grave errors they are liable to fall into by forcing and stimulating the little brains too much. It will not be disputed that instruction deserves the name only when it is methodical. Instruction is only a branch of education. Pestalozzi's principal aim was to find and employ what he called "the principle of the organic" to bring instruction into harmony with nature. Whatever knowledge we have gained we owe to him or his predecessors. But for them Froebel might not have worked out his method. Their conclusions were his study first. He aimed, he said, to find a method of education such as educational science aimed to find in instruction; and in Froebel's system the two are combined, instruction having for its chief end intellectual development, and education looking mainly to moral developmeet. The principal requirement for this is freedom of individual activity and room for the development of individual characteristics. In our present schools all such activity is repressed. Children are made to sit still, and in the playground, where the teacher might observe how the children carry out his moral precepts, they are generally left entirely without surveillance or guidance.

Much as has been done to improve education and instruction, much as has been accomplished in adapting methods of instruction to natural development and in obtaining knowledge by the easiest and best ways, still the laws of childish intellectual development have hitherto remained in darkness. So long as no firm, unswerving educational method is known, every kind, even the best, seems merely arbitrary, or at hap-hazard. That education should be according to nature nearly all the modern educators demand as an essential condition; but according to nature is according to law.

In the law of development, as traced out by Froebel in his study of childhood, every observant, thoughful mother who has been the companion of her children can realize the truth of his observation and teaching—the successive steps from the smile of her babe as its eye recognizes her, the charm of her singing, the tendency to imitate the actions of others, to the delight taken in its own free activity in its plays, all that belongs to babyhood and early childhood are familiar to her. She agrees with Froebel that the family is the needful "atmosphere of life in which God has placed the human plant," that father and mother and child are necessary to constitute a whole human being, that "family relations are the most natural ones and those that mostly occupy children."

In the development of heart and mind she knows that "love and sympathy" with all God's creatures "should be early awakened"—from his noblest work, man, down to the bee among the flowers or the ant in its busy toil in the pathway. As the mind is opening she desires what Froebel has recommended, that her child "should live much in the open air, and in the country if possible." Then she feels satisfied when he has been trained to observe carefully and to gain clear perceptions of the objects that attract his attention, when his tastes for all that is beautiful in earth or sky are forming, for she has reason to believe that he is working out his own education upon a right foundation.

Froebel said, "Man has not received his soul from man. Man is the child of nature, the child of man, and the child of God." "I have based my education in religion, and it must lead to religion," is another of his sayings. "The child's soul lies in faith as in a nest," and this faith, he says, "is like the seed-germs in spring. They are there long before they are visible, so as astronomers tell us of stars that are long in existence before their rays reach our vision; but the time when the religious development begins in the child we know not."

Notwithstanding the confidence of Froebel in the power of the maternal instinct and the influence of family life, yet he found many instances in which the natural mother is not always a true mother, and that in

education strangers may supply her place with great benefit to her children.

After half a century of the study of childhood in the living subject and the elaboration of the means of discipline, he settled in his old age into the conviction that the most important period of human education was before the child was seven years old. He had written and published several books —"The Family Book," "The Mother's Cosseting Songs," and "The Education of Man." But the dissemination of these works could not bring mothers into a full realization of his educational theory and practice. They would not even convince thinking men of the great results to be obtained. An illustration of his views in practice became a necessity if he hoped to transmit them to posterity. Though he acknowledged the family to be the first link, yet he asks, "If this be imperfectly developed, how can succeeding ones develop perfectly? If this circle, which is the basis of morality, did not enlarge, these exclusive family affections would become family egotism, of which the world is full enough. The spirit of exclusivism must be rooted out if love for humanity is to grow. Therefore the young child, after it has become perfectly familiar with the members of its family, should enter into a larger community, especially one where it will find those of its own age. There is instinctive sympathy among children in the same stage of development as among persons more advanced in years who are animated by like feelings and thoughts in the same pursuits."

It is easy to trace here the progress of Froebel's ideas in forming his ideal kindergarten. He was more than fifty years of age when he studied the mother's management of children in their infancy and mingled with those who had passed beyond babyhood, and thus gradually devised the plans and occupations to be carried on in the model system of training.

After establishing an experimental kindergarten in 1840 his last years were spent in preparing teachers for kindergartens at Rudolstadt and at Hamburg, founding similar institutions and earnestly pleading for their general introduction until he died, in his 70th year, on the 21st of July, 1852.

It was previously stated, as quoted from Miss Peabody's lecture, that the Baroness Marenholtz had "subsequent interviews with Froebel" after her first meeting with him, and "corresponded with him till his death;" and the following testimony from the same writer shows the zeal and ability of the baroness in behalf of the kindergarten system as introduced by Froebel: "After his death she has since been his chief apostle. After years of earnest work she succeeded in getting rid of the injunction against his schools made by the Prussian government; and when this was removed she helped to found a normal school in Berlin, in which she lectured gratuitously many years, fighting earnestly against the deteriorations of the system. * * The dying out of the teachers instructed by Froebel himself was manifestly producing a deteriorating effect in the quality of kindergartens, against which she so earnestly protested."

In the first Philosophers' Congress at Prague in 1867 an opportunity was found to present the kindergarten system. "The most intelligent and devoted disciples proposed to the congress an effort for the revival of Froebel's science and art in its pristine purity and power."

The work of the baroness was not in vain nor were her efforts relaxed. In a late letter she writes, "A government decree has just been made in Austria ordering that all children between four and six years of age should be sent to kindergartens; that every normal school must give kindergarten training; and every teacher, whether of that or the following stages of education, must be made acquainted with Froebel's principles and practices." This great step, we are told, is the final result of the agitation of the subject for the last few years in Europe, which began in the Philosophers' Congress in 1867.

In Mrs. Kriege's work, published in 1872, she appends a note: "The baroness is now in Florence, Italy, where she was invited by the minister of public instruction to introduce Froebel's kindergarten and normal schools for training teachers." The same writer thus testifies to her zeal, as endorsed by a French author, M. Guyard, in a letter written to the baroness in 1857, when she was in Paris: "Accept my warmest and most sincere wishes for the propagation of Froebel's method. He has found in you what all philosophers need, a

woman who understands him. As Froebel's ideas are so likely to find mother, they will have have an immense success."

In endeavoring to trace the progressive development of Froebel's system from the works written on "The Kindergarten" we find ideas corresponding with those of Bacon, Comenius, Locke, and of others whose theories are recorded. In Comenius the similarity is striking, especially in the passages quoted in Hailman's "History of Pedagogy:" "In the first six years of life the child should obtain the elements of later knowledge. * * * The material of instruction must be selected with care and treated in accordance with natural methods that agree with the normal development of children." These coincidences in ideas may be traced from age to age, but it is the realization of their importance and their truth by practical illustrations or successful experiments that entitles the discoverer to become the leader of a system.

Froebel first looked upon the family and the mother as the true educational agencies, but at length settled upon the plan of the kindergarten for children under six years old as the most favorable mode of proving that the play of these little ones could be united to work with additional enjoyment, and that knowing and doing would strengthen both the receptive and the productive faculties by bringing them together.

Thus the kindergarten was justly regarded as a novelty in education, becoming an organized outgrowth of Froebel's ideas. There had been previous institutions in different countries for the early training of children. Francke established an infant school at Hamburg in 1867. "Wilderspin," says Edgeworth, "started infant schools for poor children years ago in England and Scotland These had their songs, accompanied by action, representing different avocations, such as sowing, reaping, &c., with gymnastic exercises and object lessons given by questions and answers. Similar schools were formed in this country more than fifty years ago for the children of the poor or for those of laboring women during their working hours. It was a pleasant sight to look at these merry little ones going through their exercises, singing the simple words in unison, marching and countermarching around the room. When they were seated to listen to the questions asked about the objects pointed out it seemed quite a step in educational advancement to hear them answer to the question 'What kingdom does this belong to?' as the teacher held up before them the object to be designated as belonging to the animal, the vegetable, or the mineral kingdom. All that was learned was taught orally, to be repeated when questioned. How far these answers were merely verbal repetitions, or whether any *idea* was given of what was meant by the questions or the answers, there was no opportunity of testing; but I longed to take these little ones apart one by one to find what impressions had been made, or if the perceptive faculty had been awakened respecting the objects.

In the chapter on "Toys" in Edgeworth's "Practical Education" he says, "The first toys for infants should be such things as may be grasped without danger. Round ivory or wooden sticks, square and circular bits of wood, balls, cubes, and triangles, with holes to admit the sticks, should be their playthings." In the chapter on "Arithmetic" these cubes, with their divisions, are used in learning the science of numbers. In what was called the lyceum system geometrical cards for copying, and geometrical albums filled with different forms made by the children with different colored paper, were among the other educational tools prepared for teaching the younger classes.

Hailman justly remarks: "The kindergarten must not be confounded in its nature or aims with the institutions existing in various countries under different names long before the kindergarten." Nor do the similar ideas found in different minds in different ages or countries detract anything from the claim of Froebel to the invention of the system, as in the kindergarten there are new ideas promulgated and new applications made never tried before.

Descriptions of the kindergarten and directions how it should be carried on are given in the several works on the subject, but much must depend on the peculiar fitness of the teacher in her influence over the children and the loving sympathy she feels in their work and their plays. To witness the happiness of the little ones in such a kindergarten as Miss Peabody called a "glorified nursery" must bring a more vivid realizations of Froebel's ideal than

could be effected by the study of the kindergarten philosophy in books.

There is much truth in the following quotation from an unknown author: "The child has a right to employment and the free use of its faculties; but there are sad indications that in many families the rights of children are neglected. 'What shall I do?' is the plaintive wail of many a little one imprisoned in rooms where everything is too nice to be played with. 'Sit down and be quiet' is too often the impatient rebuke it hears when among grown-up people who can not endure noise."

If occupation of some kind is not provided when the child is full of life and activity, by and by enforced idleness becomes habitual. Indolence or inertia in body or mind is not the normal condition of a healthy child. Checking the impulse of childhood *to do* and *to know* is a wrong that may never be remedied. Dwarfing or forcing are opposite errors both equally fatal.

Froebel designates play "the first work of childhood." The little one in the kindergarten is never heard to make the plaintive inquiry, "What shall I do?" In the midst of the happy groups of play-fellows and fellow-workers there is always enjoyment or employment in the plays or the work.—*Mrs. A. J. Graves, in Home and School.*

EXAMINATION QUESTIONS.

AT THE RECENT COUNTY BOARD EXAMINATIONS.

THIRD CLASS.

EDUCATION AND SCHOOL LAW.

Time—Two hours.

VALUES

15 1. What is comprehended under the general name of Education?

25 2. Show clearly the importance of the proper organization of the school to both teacher and pupils.

40 3. Make a time table for a school of fifty pupils, none being higher than the fourth class. Show (*a*) what portions of time per week you give to each subject, and (*b*) how you would keep all your pupils employed while each class is reciting.

20 4. What qualification would you require in a good monitor? What are the law and regulations as to the appointment of monitors?

20. 5. Write a letter to a Board of Trustees in answer to a request that you will inform them what furniture they will require for their new school-house (50 pupils).

30 6. Draw up a set of rules for—

(*a*) A monthly examination;
(*b*) The conduct of the pupils;
(*c*) The guidance of your assistant.

ENGLISH GRAMMAR AND ETYMOLOGY.

Time—Three hours.

VALS.

15 1. What is meant by Inflection, Gender, Predicate, Complement, Interjection?

19. 2. Write the plural of pea, attorney, stratum, lens, focus, mussulman, Henry, sixpence, seraph, cameo, index, crisis; and masculine or feminine form, as the case may be, of widow, czar, testator, witch, duke, sultan, earl.

30 3. Divide the following passage into propositions, stating their kind and their relations to one another; and analyse them:—

"*When* we met with the incident, or heard the conversation, or saw the spectacle, or *felt* the emotion, which were the first causes or *occasions* of *some* of the chief permanent tendencies of future life, *how little* could we think that *long* afterwards we might be curiously and in vain desirous to investigate those tendencies *back* to their origin."

24 4. Parse the words printed in italics.

18 5. Explain the different uses of the objective case, giving an example of each.

12 6. What is the passive voice? When may a verb in the passive voice be followed by the objective case?

20 7. Write the past tense, present participle, and past participle of loose, bear, come, eat, flow, fly, go, dye, singe, die.

19 8. Show the different ways in which the words "there," "it," and "but are employed.

20 9. Write the Latin or Greek prefixes signifying aside, across, against, down, together, change, near to, with examples; and explain the meaning of all the prefixes and affixes in the passage for analysis.

23 10. Correct, where necessary, the spelling of the following words:—surplice, Febuary, sherriff, rodomontade, imbecillity, Hindostand, sirname, moneys, mischevious, maritime, Calvanism, envelope, delerious, superintendent, apostasy, extacy.

GEOGRAPHY.

Time—Two hours.

VALS.

10 1. Define Ecliptic, Circle of Illumination, Orbit, Meridian, Zodiac, Fiord, Morass, Estuary, Delta, Frith.

10 2. Account for the position of the Tropics and Polar Circles.

10 3. Describle briefly the principal ocean currents.

10 4. Mention a few of the circumstances on which the climate of a country chiefly depends.

10 5. Name the tributaries, (1) of the St. Lawrence, (2) of the Ottawa.

10 6. Name the States, (1) along the west bank of the Mississippi, (2) along the east bank, with the Capital of each.

20 7. Name the Countries of Europe, with the Capital and Political Relation of each.

28 8. Locate definitely the following, and tell for what each is famous: Philadelphia, Chicago, Quebec, Lyons, Canterbury, Leeds, Greenock, Galway, Toulon, Corunna, Heidelberg, Aleppo, Lucknow, Macassar.

17 9. Where are the following: Islands—Santa Cruz, Barbadoes, Pitcairn, Jūra. Capes—Wrath, Palos, Bathurst, Amber. Rivers—Senegal, Kistna, Mosell, Madeira. Bays—All Saints, Hillsborough, Placentia, Naples, Zuider Zee.

HISTORY.

Time—Three hours.

15 1. Distinguish the discoveries of Cabot and Cartier.

10 2. What were the chief features of the Feudal System.

20 3. Say briefly what you know of "Poyning's Act," "the Poor Laws," "the Exclusion Bill;" "the Convention of Cintra," "the Revolution of 1688."

17 4. Name the chief events in the reign of Charles II.

15 5. Distinguish the wars of aggression and the wars of defence waged by the English nation. Give the reason of your answer, in each case.

18 6. Under what circumstances were Ireland, Wales, and Scotland united with England? Give the dates.

16. 7. When did these persons live, and for what are they famous:—Simon de Montfort, Geoffrey Chaucer, Lord Cobham, Sir Philip Sidney, Sir William Temple, Algernon Sidney, James, Duke of Monmouth, Rich'd Cobden?

24 8. State the geographical position of the following Battle-fields, and assign the proper dates:—Bannockburn, Flodden, Dunbar, Prestonpans, Fontenoy, Plassey, Salamanca, Brandywine, Alma. Write briefly the particulars of any *one* of these battles.

15 9. What is meant by the British Constitution? Write a short account of its leading features.

ENGLISH COMPOSITION.

Time—One hour and a quarter.

Write a letter to a friend who wishes to know what he must do in order to prepare himself to become a Teacher.

ARITHMETIC

Time – Three hours.

VALS.

20 1. Find what quantity must be added to $\left(\frac{1\frac{1}{2} \text{ of } 2\frac{1}{3}}{3\frac{1}{2} \text{ of } 3\frac{2}{3}} \text{ of } \frac{1\frac{3}{7} \text{ of } 1\frac{1}{6}}{1\frac{3}{7} \text{ of } 32\frac{3}{8}} + \frac{2\frac{1}{8} \text{ of } 6\frac{2}{3}}{3\frac{1}{8} \text{ of } 4\frac{1}{2}}\right)$ to $\frac{1}{3\frac{1}{2}}$ make it equal to $\left(\frac{1}{28\frac{3}{7}} \text{ of } 3\frac{3}{4} \text{ of } 3\frac{1}{7} \text{ of } 1\frac{5}{7} + \frac{3}{8}\right)$

20 2. Reduce to its simplest form $\frac{(.075)^3 + (.025)^3}{(.075)^2 - (.075)(.025) + (.025)^2}$; and and divide 9.17054 by 3.36, giving the result to the end of the first period.

10 3. Express $\frac{3}{40}$ of 12*s.* 6*d.* + $\frac{4}{10}$ of 3 guineas + $\frac{5}{12}$ of £4 − $\frac{3}{70}$ of $2\frac{1}{5}$*d.*, as a fraction of £5.

20 4. A merchant marks his goods so that he may allow a discount of 5% and still make a profit of 15%. Find the marked price of broad cloth that cost him $3.80 a yard.

24 5. At an election in a constituency in which the number of voters was 1,800, the votes polled by the candidates were in the ratio of 7 to 5, and the successful candidate was elected by a majority of 240. Find the number that did not vote.

20 6. A rectangular plot of ground is 60 feet long and 50 feet wide; one pathway is made surrounding the plot on the outside, and two others intersecting at right angles in the middle of the plot; if these pathways are 5 feet wide, and cost $62\frac{1}{2}$ cents a square yard, find their entire cost.

28 7. A and B engaged in business, the former contributing $7,500, the latter $4,500. The gross receipts for the first year were $2,800, of which 5% was paid for insurance, and $14\frac{2}{7}$% for other expenses; of the balance, B received a certain sum for managing the business, and the remainder was divided in proportion to the capital each invested: A's share was $1,250; find B's allowance as manager.

18 8. At what rate per cent., will $1,520 amount to $1.733.75 in $2\frac{1}{4}$ years? Find also in what time $33.40 will double itself at $6\frac{2}{3}$ per cent. per annum.

28 9. A drover bought 400 sheep at a certain price per head. He sold $\frac{3}{8}$ of them at a gain of 20%, $\frac{3}{10}$ of them at a gain of 15, and the remainder at a loss of 10% gaining on the whole $217. How much did he pay for the 400 sheep?

18 10. If three horses are worth 7 cows, and 5 cows cost as much as 30 sheep, and 16 sheep cost $165; find the value of 12 horses.

SECOND CLASS.

ENGLISH GRAMMAR AND ETYMOLOGY.

Time—Three hours.

VALS.

35. 1. Divide the following passage into propositions; state their several relations to one another, and give the full analysis of each proposition:—

"*What* is this life to me? not *worth* a *thought*;
Or, *if* it be esteemed, *'tis that* I lose it
To win a better; *even* thy malice serves
To me, *but* as a *ladder* to *mount* up
To such a height of happiness, *where* I shall
Look down with scorn on thee and on the world;
Where, *circled* with true pleasures, placed above
The reach of death or time, 'twill be my glory
To think at *what* an easy price I bought *it*."

—MASSINGER.

14 2. What do you understand by "Gender" in Grammar? Show that your definition applies to each of these words:—Lady, Seamstress, Man-servant, Testatrix, Mistress, Heroine, Margravine.

15 3. Give rules for the right use of the Subjunctive Mood, with examples.

24 4. Criticize the syntax of the following sentences, suggesting corrections where necessary:—

(*a*) Whom say ye that I am?
(*b*) From whence comes he?
(*c*) Whom the gods love die young.
(*d*) And many a holy text around she strews

That teach the rustic moralist to die.

(*e*) "Neither riches or beauty furnish solid peace and contentment."

(*f*) "Three months' notice are required previous to a pupil leaving school."

(*g*) "If I were he, I would take more care for the future."

(*h*) "The atrocious crime of being a young man I shall neither attempt to palliate nor deny."

20 5. Convert the following adjectives by the help of prefixes or suffixes into verbs:— Large, Just, Humble, Strong; and convert the following verbs into nouns:— Weave, Compel, Receive, Dig, Think; and explain the law which governs each change.

13 6. What parts of speech perform a double function? Give full explanatory examples.

14 7. Write the past tense, present participle, and past participle of flow, fly, singe, dye, loose, lay, bear.

16 8. Give accurate rules for the use of *shall* and *will*.

10 9. Give adjectives formed from Latin or Greek roots, corresponding to the English nouns brother, forest, breath, beginning, husband, cloud, leg, eye, hand, rule.

24 10. Trace the following words to Latin or Greek roots:—Venison, Sample, Maintain, Livery, Human, Hermit, Sarcophagus, Volume, Tautology, Technical, Phylactery, Blasphemy.

30 11. Parse the italicized words in the passage given for analysis.

HISTORY.

Time—Two hours.

VALS.

10 1. Tell the origin and course of the war in Canada closed by the Treaty of Ryswick.

13 2. Enumerate in order the Governors of Canada since 1840; and state the principal events of the Administration of Sir Edmund Head.

10 3. What were the chief features of the Feudal System?

12 4. State the events by which the component elements of the English nation became welded into one people.

12 5. Tell briefly what you know of Lambert Simnel and Perkin Warbeck.

20 6. Give some account of the Battle of Evesham, the Constitution of Clarendon, the Siege of Londo. derry, and the Siege of Sebastopol.

12 7. When did the following persons live, and for what are they famous: Sir William Wallace, Lord Cobham, John Pym, Sir John Eliot, Sir Cloudesley Shovel, Sir Charles Napier?

16 8. State the geographical position of the following battle-fields, and assign the proper dates:—Bannockburn Flodden, Sedgemoor, Bothwell Bridge, Fontenoy, Blenheim, Salamanca, and Assaye.

15 9. Write short explanatory notes on

(*a*) The Clergy Reserves Act.

(*b*) The Habeas Corpus Act.

(*c*) The Bill of Rights.

15 10. State the origin, course, and results of the Peloponnesian War.

15 11. Tell concisely what you know of the career of Julius Cæsar.

GEOGRAPHY.

Time—Two hours.

VALS.

15 1. Discuss minutely the causes which produce variation of climate.

8 2. Show by a diagram that neither the sun nor the moon can be eclipsed when the latter is in her quarters.

14 3. Account for the formation of clouds, rain, snow, hail, glaciers, springs, dew.

15 4. Describe the principal water-sheds of Europe, and give the rivers on each slope.

15 5. Classify the States of the American Union on the basis of agricultural products.

20 6. Name the principal rivers of Ontario and Quebec, tell where they empty, and mention the chief towns or cities on their banks.

12 7. Describe the river systems of Asia.

13 8. Name and locate the colonies of France.

10 9. Discuss the natural commercial advantages of Europe.

28 10. Draw an outline map of the British Islands, and locate Limerick, Donegal, Inverness, Ayr, Perth, Southampton, Holyhead, Hull; Rivers Bann, Barrow, Tay, Clyde, Severn, and Humber with its tributaries.

EDUCATION AND SCHOOL LAW.

Time—Two hours.

VALS.

15 1. To what extent and in what way should a teacher render assistance to pupils?

20 2. Explain your method of teaching Grammar and Composition together to a 2nd or 3rd class.

20 3. "In imparting instruction the teacher should proceed from the known to the unknown." Show by examples how this rule should be observed in applying the principles of Simple Reduction to Reduction of Fractions.

15 4. What means would you adopt to prevent or check irregularity of attendance?

15 5. What are the most important points to be observed in the organization of a School?

15 6. "The work of *instruction* may be temporary, but the results of *education* must be permanent." Discuss this.

15 7. Give the prescribed programme of studies for 1st, 2nd, 3rd and 4th classes in Public Schools.

10 8. What are the regulations relating (1) to the suspension, (2) to the expulsion of a pupil?

15 9. What registers are required in Public Schools? Give the use of each.

10 10. Define adequate school accommodation.

DRAWING.

Time—One hour and a quarter.

Value—10 for each.

1. Give definitions concerning parallelograms.
2. Draw a perpendicular to a given line from any point above the line.
3. Daw a line parallel to a given line from any point above the line.
4. Give method for dividing a line into any given number of parts.
5. Give definitions concerning triangles.
6. Draw a circle through three given points not in a straight line.
7. Construct an angle equal to a given angle.
8. Give definitions concerning four-sided figures which are not parallelograms.
9. Find the centre of a circle.
10. Give method for dividing the protractor into 180 degrees.

ENGLISH COMPOSITION.

Time—One hour and a quarter.

The Candidates may select any one of the following subjects:—

The Centennial Exhibition.
The Progress of Canada.
"Man never is, but always to be blest."

DICTATION.

Fourth Reader, page 238.—"The frescoes on the walls - - Horace or Anacreon."

READING.

Fourth Reader, page 214.—"You are standing on - - - this fearful moment?"

CHEMISTRY, BOTANY AND PHYSIOLOGY.

Time—Two hours.

VALS.

14 1. Explain the composition of the different kinds of hard water.

15 2. Describe the methods by which hydrogen may be obtained from water. Show what becomes of the oxygen in each case.

15 3. What gases go up the pipe of an ordinary wood-burning stove? Give a short description of each of them. Account for the deposition of soot in the pipe.

16 4. State accurately the composition of Nitric Acid, Carbonic Acid Gas, Hydrochloric Acid, and Sulphuric Acid, giving in each case the formula and the molecular weight.

15 5. What differences besides those in the seed-leaves distinguish acotyledonous, monocotyledonous, and dicotyledonous plants?

16 6. Explain the meaning of the terms Sepal, Bract, Raceme, and Stipule. Describe minutely the Stamen and the Pistil, and give the names applied to their parts.

14 7. Are the portions of the onion, the potato and the turnip, which are capable of preservation through the winter, equally entitled to the name of roots? Give reasons for your answer.

16 8. Write explanatory notes about Sutures, Synovial, Glands, Salivary Glands, and Hinge Joints.

15 9. Classify the milk teeth and the permanent teeth. At what age do the different molars make their appearance? Describe the structure and mode of growth of the teeth.

14 10. Explain how the bones are nourished, and describe their structure. What is their chemical composition?

EUCLID.

Time—Three hours.

VALS.

16 *1. The angles at the base of an isosceles triangle are equal to one another; and if the equal sides be produced, the angles on the other side of the base shall be equal to one another.

3. Where does Euclid require the second part of this theorem?

16 *2. If two triangles have two sides of the one equal to two sides of the other, each to each, but the angle contained by two sides of one of them greater than the angle contained by the two sides equal to them, of the other, the base of that which has the greater angle shall be greater than the base of the other.

6 Why the restriction "Of the two sides DE, EF, let DE be the side which is not greater than the other?"

16 *3. If two triangles have two angles of the one equal to two angles of the other, each to each, and have also the sides adjacent to the equal angles in each, equal to one another, then shall the other sides be equal, each to each; and also the third angle of the one equal to the third angle of the other. (Prove by superposition).

3 What propositions in Book I. are thus proved?

16 4. If a straight line fall upon two parallel straight lines, it makes the alternate angles equal to one another, and the exterior angle equal to the interior and opposite angle on the same side; and also the two interior angles on the same side together equal to two right angles.

8 What objections may be taken to the twelfth axiom?

2 What is its converse?

16 5. In any right-angled triangle, the square which is described on the side subtending the right angle is equal to the squares described on the sides which contain the right angle.

12 Prove also by dissection and superposition.

18 6. Draw through a given point between two straight lines not parallel a straight line which shall be bisected in that point.

18 7. The "perpendiculars from the angles of a triangle on the opposite sides" meet in a point.

20 8. Given the lengths of the lines drawn from the angles of a triangle to the points of bisection of the opposite sides, construct the triangle.

20 9. If a straight line be divided into two parts, the square on the whole line is equal to the squares on the parts, together with twice the rectangle contained by the parts.

20 10. In every triangle, the square on the side subtending an acute angle is less than the squares on the sides containing the angle by twice the rectangle contained by either of these sides, and the straight line intercepted between the perpendicular let fall on it from the opposite angle, and the acute angle.

N.B—Algebraic symbols must not be used. Candidates who take Book II. will omit questions 1, 2, and 3 marked *.

NATURAL PHILOSOPHY.

Time—Three hours.

VALS.

15 1. What particulars are required to be known in order to specify a force? What are the conditions of equilibrium of three forces acting at a point? What of three forces acting on a rigid body?

18 2. Forces of 1 lb., 4 lbs., and 6 lbs., respectively act on a particle, the force of 4 lbs. being inclined at an angle of 60° to each of the others, find the magnitude and direction of their resultant.

9 3. (*a*) What is meant by the moment of a force with respect to a point? State the principle of moments.

18 (*b*) A uniform rod a foot of which weighs 3 lbs., rests on a fulcrum two feet from one end, what weight suspended from that end will keep it horizontal when the pressure on the fulcrum is 300 lbs?

18 4. A circular plate of two feet has a circular hole of eight inches radius cut in it, find the distance of the centre of gravity from the centre of the plate, if the centre of the plate, and hole are twelve inches apart.

18 5. n cylinders of the same height h the radii of which are equal to $r_1, r_2, r_3, - - - - r$ respectively stand one upon another with their axes in the same straight line; find the height of the common centre of gravity above the base of the first.

10 6. Define mass, density, specific gravity. What is the relation among mass, volume, and density?

12 If the volume of fresh water at 60° F. be 1.00094 and that of sea water be 1.0017, the standard volumes being at 39.1°., find the specific gravity of mid-Atlantic water at 39.1 F., given, that it is 1.0262 at 60° F.

16 7. Describe the Air pump, giving the principles of its action.

16 8. Describe Bramah's hydrostatic press, giving the principles of its action.

BOOK-KEEPING.

Time—One hour and a quarter.

VALS.

10 1. What do you consider the more satisfactory system of Book-keeping, Single or Double Entry? Give your reasons in full.

15 2. Explain the following terms as used in Book-keeping: Bills Payable, Stock, Shipment, Consignment, Account Sales, Acceptance, Drawee, Protest.

25 3. Journalize the following. Give your rule, and show that it is satisfactory when applied to these particular entries:—

(*a*) July 1st, 1876. I commence business investing as follows:—Cash $5,000, Mdse. $2,500, wood for use in store $100. I owe on a note, favor of John Thompson, dated June 1st, at 6 mos. $1,200, with one month's interest on same $8.

(*b*) Bought of John Jones, Mdse. as per invoice $1,200. Gave in payment my note for $600 at 30 days. Balance on account.

(*c*) Received from Henry Kerr 100 Bbls. Flour invoiced at $8 per Bbl., to be sold on his account and risk, paid drayage, &c. by an order on W. Smith $40.

20 4. Give Day Book entries corresponding to the following Journal entries:—

(*a*) Mdse. Dr. .....$ 250 00
Bank " 100 00
To JOHN WALKER. $ 350 00

(*b*) Bills Payable, Dr. 800 00
To Bank 300 00
" Wm. West.. 450 00
" Discount.... 50 00

(*c*) Shipment to A.B. Dr. 1,600 00
To Mdse..... 1,000 00
" C. D..... 500 00
" Cash 100 00

30 5. Give Day Book entries corresponding to the following entries as found in Mdse. account, and close the account, given that $2,000 worth of Mdse. still remain unsold:

		Dr.		Mdse.
July	1	To Stock		$3,000 00
"	3	" Sundries		540 00
"	5	" Bills Receivable		320 00
"	8	" Wm. Cooper		800 00
"	10	" John Smith		410 00
			Cr.	
July	1	By Cash		300 00
"	3	" Bills Payable		150 00
"	6	" John Jones		1,200 00
"	8	" Shipment to A. B.		1,800 00
"	9	" Bills Receivable		1,500 00
"	10	" Bank		100 00

ALGEBRA.

Time—two hours and three quarters.

VALS.

8 } 1. Divide $(1+m)x^3-(m+n)xy(x-y)$
7 } $-(n-1)y^3$ by x^2-xy+y^2.

Show that $(a+a^{\frac{1}{2}}b^{\frac{1}{2}}+b)^3-(a-a^{\frac{1}{2}}b^{\frac{1}{2}}+b)^3$ is exactly divisible by $2a^{\frac{1}{2}}b^{\frac{1}{2}}$.

4 } 2. Resolve into factors $x^4+2xy(x^2-y^2)-y^4$.
4 }
6 } $a^2(b-c)+b^2(c-a)+c^2(a-b)$, and $25x^4+5x^3-x-1$.

18 3. If x^3+px^2+qx+r is exactly divisible by x^2+mx+n, then $nq-n^2=rm$.

4 } 4. Prove that if m be a common measure of p and q it will also measure the difference of any multiples of p and q.
6 }
6 }

Find the G. C. M. of $x^4-px^3+(q-1)x^2+px-q$ and $x^4-qx^3+(p-1)x^2+qx-p$ and of $1+x^{\frac{1}{2}}+x+x^{\frac{3}{2}}$ and $2x+2x^{\frac{3}{2}}+3x^2+3x^{\frac{5}{2}}$.

7 } 5. Prove the rule for multiplication of
7 } fractions.

Simplify $\dfrac{x^2-(y-z)^2}{(y+z)^2-x^2}\times\dfrac{y^2-(z-x)^2}{(z+x)^2-y^2}\times\dfrac{z^2-(x-y)^2}{(x+y)^2-z^2}$;

and $\dfrac{a}{a^2+b}-\dfrac{a}{a^2-b^2}+\dfrac{a^2}{(a-b)(a^2+b^2)}-\dfrac{2a^3-b^3-ab^3}{a^4-b^4}$.

3 } 6. What is the distinction between an
3 } *identity* and an *equation?* If
10 } $x-a=y+b$, prove $x-b=y+a$

Solve the equations $(2+x)(m-3)=-4-2mx$,

and $\dfrac{16x-13}{4x-3}+\dfrac{40x-43}{8x-9}=\dfrac{32x-30}{8x-7}$.

$\dfrac{20x-24}{4x-5}$.

3 } 7. What are *simultaneous equations?*
3 } Explain why these must be given as
10 } many independent equations as there are unknown quantities involved. If there is a greater number of equations than unknown quantities, what is the inference?

Eliminate x and y from the equations $ax+by=c$, $a'x+b'y=c'$, $a''x+b''y=c''$.

10 } 8. Solve the equations—
4 }

(1) $\sqrt[3]{n+x}+\sqrt[3]{n-x}=m$

(2) $3x+y+z=13$
$3y+z+x=15$
$3z=x+y=17$.

14 9. A person has two kinds of foreign money; it takes a pieces of the first kind to make one £, and b pieces of the second kind: he is offered one £ for c pieces, how many pieces of each kind must be take?

15 10. A person starts to walk to a railway station four and a-half miles off, intending to arrive at a certain time; but after walking a mile and a half he is detained twenty minutes, in consequence of which he is obliged to walk a mile and a half an hour faster in order to reach the station at the appointed time. Find at what pace he started.

8 } 11. (*a*) If $\dfrac{a}{b}=\dfrac{c}{d}$ then will $\dfrac{a^4+c^4}{b^4+d^4}=\dfrac{a^2c^2}{b^2d^2}$
8 }

8 (*b*) Find by Horner's method of division the value of
$x^5+290x^4+279x^3-2892x^2-586x-312$ when $x=-289$.

(*c*) Show without actual multiplication that

$(a+b+c)^3-(a+b+c)(a^2-ab+b^2-bc+c^2-ac)-3abc=3(a+b)(b+c)(c+a)$.

ARITHMETIC.

Time—Three hours.

25 1. Find the difference between

$$\left\{\frac{.26+.2 \text{ of } 3\cdot7}{.48-.014 \text{ of } 20} - \frac{4\cdot\dot{3}+5\cdot\dot{6}}{7\cdot4-2 \text{ of } 11}\right\} \text{ of } £1\ 10s.\ 6d.$$

and

$$\left\{\frac{\frac{1}{3} \text{ of } \frac{5}{9} \text{ of } 7\frac{1}{6}}{\frac{1}{3}+4\frac{1}{2} \text{ of } \frac{4}{11}} + \frac{\frac{4}{5}-2\frac{1}{3}+1\frac{8}{15}}{\frac{7}{96}+150\frac{5}{19}-74\frac{3}{8}}\right\} \text{ of } £1\ 5s.\ 6d.$$

VALS.

25 2. Show that Bank discount exceeds true discount by the simple interest on the true discount. Find the amount which a banker gains by discounting a bill of $3451.50, drawn 12th July at 4 months, and discounted September 3rd, at 5 per cent., per annum, usual days of grace; give answer to exact fraction of a cent.

25 3. A retail merchant bought a quantity of Canadian tweed, and marked it at an advance of 25 per cent. on cost, and in selling it used a yard measure which was ¾ of an inch too short, his entire gain being $124.80; find the cost price of the cloth, and the amount the merchant gained by using the false measure.

25 4. A person invests a certain sum (U. S. currency) in U. S. 5's 10-40 (*i.e.* certain bonds paying 5 pr. ct.), and $70\frac{10}{13}$ per cent. more than that sum in U. S. 6's 5-20, the former being at a discount of 5 per cent., and the latter at a premium of 8 per cent., and the interest on both payable in gold. His income from the two investments was $1400 in gold. Find the amount (currency) invested in each kind of bonds.

25 5. Three workmen A, B, C, did a certain piece of work and were paid daily wages according to their several degrees of skill. A's efficiency was to B's as 4 to 3, and B's to C's as 6 to 5; A worked 5 days, B 6 days and C 8 days, and the whole amount paid for the work was $36¼. Find each man's rate of wages per day.

25 6. A merchant in Montreal owes another in Lisbon 1623⅜ milrees, and resolves to remit through London, Amsterdam and Paris: exchange between Montreal and London is at 9½ per cent., between London and Amsterdam £1 sterling for £1 $\frac{3}{3}\frac{5}{6}$ Flemish, between Amsterdam and Paris £1 Flemish per 13 francs, and between Paris and Lisbon 3 francs per 450 rees: if the expenses of this circuitous course be 2½ per cent., what will it cost the Montreal merchant to settle his Lisbon account? (1,000 rees = 1 milree).

20 7. I bought a hind quarter and a fore quarter of beef weighing together 252 lbs.; I paid 7¼ cents a pound for the hind quarter and 5½ cents a pound for the fore quarter, and found that I had paid 17½ cents on the whole more than if I had bought both quarters at 6⅜ cents cents per pound; find the weight of each quarter.

25 8. A person bought a piece of land for $1,000, to be paid for in five years with interest at 10 per cent.; he was allowed a choice of two modes of payment, (1) he could leave the principal unpaid till the end of the five years, paying the interest due annually; (2) he could pay $200 of the principal each year together with the accrued interest: money being worth 10 per cent. compound interest, determine whether one of these modes was more profitable than the other, and how much his land ultimately cost him.

25 9. A merchant bought 400 lbs. of tea and 1600 lbs. of sugar, the cost of the latter per pound being 16⅔ per cent. that of the former; he sold the tea at a profit of 33⅓ per cent., and the sugar at a loss of 20 per cent., gaining however, on the whole $60: find his buying prices and his selling prices.

15 10. (*a*) Two towers 40 feet and 50 feet high respectively, are standing in the same horizontal plane 120 feet

apart; how far from each tower is that point in the line joining their bases, which is equally distant from their summits.

15 (*b*) Two adjacent sides of parallelogram are 25 feet and 35 feet respectively, and one of the diagonals is $10\sqrt{12}$; find the other diagonal.

FIRST CLASS.

ENGLISH LITERATURE.

Time—Three Hours.

Shakespeare.

1. Describe the character of Lady Macbeth as developed by Shakespeare, introducing quotations when you can.
2. Enumerate the principal influences which operated to quicken the national life and to stimulate the intellectual activity of the English in the latter half of the reign of Queen Elizabeth.
3. Give a synopsis of the evidence adduced by those who hold the view that Shakespeare visited Scotland before Macbeth was written.
4. Explain the italicised words in the following quotations:—

"Shoughs, water-rugs, and demi-wolves are *cleped*
All by the name of dogs: the *valued file*
Distinguishes the swift, the slow, the subtle."

"Come, *seeling* night,
Skarf up the tender eye of pitiful day."

"The title is *affeer'ed*."

"Scotland hath *foysons* to fill up your will."

5. State in what part of Macbeth the following passages occur, and by whom they are uttered:

"Can'st thou not minister to a mind diseas'd;
Pluck from the memory a rooted sorrow;
Raze out the written troubles of the brain;
And, with some sweet oblivious antidote,
Cleanse the stuff'd bosom of that perilous stuff,
Which weighs upon the heart?"

"Thou hast it now, King, Cawdor, Glamis, all,
As the weird woman promis'd; and I fear
Thou play'd'st most foully for't; yet it was said,
It should not stand in thy posterity;
But that myself should be the root, and father
Of many kings."

"The labor we delight in, physics pain."

"Sleep, that knits up the ravell'd sleave of care,
The death of each day's life, sore labor's bath,
Balm of hurt minds, great nature's second course,
Chief nourisher in life's feast."

Milton.

6. Give a full account of the part which Milton took in English politics.
7. Dr. Johnson in his criticism of "Il Penseroso" says: "Milton probably had not yet forsaken the Church." State when this poem was written, and quote or refer to any passage in it that would seem to support Johnson's opinion.
8. "Com, pensive Nun, devout and pure,
Sober, stedfast, and demure,
All in a robe of darkest grain
Flowing with majestick train,
And sable stole of Cipres lawn
Over thy decent shoulders drawn!
Com, but keep thy wonted state
With eev'n step and musing gate
And looks commercing with the skies,
Thy rapt soul sitting in thine eyes."

—*Il Penseroso: Ll.* 31-40:

(*i*) Write explanatory notes on 'grain,' l. 33; 'sable stole of Cipres lawn,' l. 35; 'decent,' l. 36; 'commercing,' l. 39; and 'rapt,' l. 40.

(*ii*) Give the derivation of 'demure,' 'stole,' 'musing,' and 'rapt.' Make a list of the words in the language containing the same root as 'stedfast.'

(*iii*) Parse 'all,' l. 33.

Addison.

9. Give an account of the part played by Steele in founding our periodical literature.
10. Write a synopsis of the Vision of Mirzah.

Johnson.

11. Compare the prose style of Johnson with that of Addison.
12. Give Johnson's distinction between simile and exemplification.
13. Name the chief writers contemporary with Johnson, and state in what path of literature each of them excelled.

CHEMISTRY.

Time—Two Hours.

1. A mineral water, in addition to chlorides, contains small quantities of iodides and bromides: how would you detect the presence of these salts in water?
2. Describe the properties of carbon which tend to show that diamond cannot have been formed at a temperature at which pure iron melts. How would you show that carbonic acid (CO_2) is a compound of

carbon and oxygen, and that it contains (very nearly) its own volume of oxygen?

3. Describe how you would prove bone-ash to consist chiefly of calcium phosphate. Explain the decomposition of bone-ash by diluted sulphuric acid. Explain by means of symbols the reaction which takes place when a solution of sodium carbonate is added to one of phosphoric acid.

4. Describe the leading properties of arsenic, and name those elements that are usually grouped with it. What means do we possess for the detection of small quantities of arsenic? Name the substance which is considered the best antidote against it. State how you would determine whether a given gas consists of arseniuretted or antimoniuretted hydrogen.

5. Describe the preparation of potassium from potassium carbonate, and explain the process. State how you would distinguish potassium from sodium, and how detect each metal in its compound.

6. By what experiments would you prove that gunpowder is a mixture and not a compound. Explain fully how the substances of which it is composed act on each other during combustion. How do you explain the mechanical effects produced by the explosion of gunpowder?

7. How is metallic lead obtained from galena? A sample of water is supposed to contain a small quantity of a lead compound: describe fully how you would examine the water for lead.

8. How would you prepare pure silver from an alloy of silver and copper? Why is silver considered a monovalent metal? Enumerate the oxides of silver and give a brief description of each of them. The ordinary silver coins are made of an alloy of silver and copper: how would you prove the presence of both these metals in a coin?

9. State the composition per cent. of iron pyrites, epsom salts, calomel, and corrosive sublimate.

10. What weight of marble, when acted on by hydrochloric acid, will yield a cubic foot of carbonic acid gas?

BOTANY AND AGRICULTURE.

Time—Two Hours.

1. Explain the origin of the different kinds of placentas; and of the different parts of the fruit of the plum, the oak, and the maple.

2. Describe fully the process by which it is supposed that water is carried up from the roots of plants.

3. Give the meaning of the terms *stomata, indehiscent, thyme, glume,* and *pyxis.* Distinguish *epiphytes* from *parasites.*

4. Describe any plant which you have examined; if you can, tabulate your description.

5. Name all the families of monopetalous dicotyledons which you remember, and give the characters of any one of them.

6. Illustrate the connection between the arrangement of leaves on the stem, and the position of the various parts of the flower.

7. What are the most important mineral constituents of wheat, of wheat straw, of the tubers of the potato, and of clover?

8. Explain the value of gypsum as a manure.

9. Write notes on the proper methods of cultivating Indian Corn, Peas and Turnips.

10. Compare the chemical composition of wheat and beef.

GEOGRAPHY.

Time—Two Hours.

1. Discuss the origin and development of prairies.

2. What is the ratio of increase in the temperature of the earth in descending from the surface towards the centre? What thermal phenomena arise therefrom, and why is the surface temperature affected so little by the internal heat?

3. Account for the formation of stratified and unstratified rocks, and classify the latter in chronological order.

4. What points of similarity are noticeable in the vertical relief of all the continents?

5. Give examples of remote and recent changes in the configuration of the earth's surface.

6. If a person go around the world westward to the place whence he set out, how much time will he gain or lose? Explain.

7. Define the following:—Declination, Cardinal Points in the Heavens, Equinoctial Points, Nodes, Disc, Apogee, Transit, Perihelion.

8. Name the States of the American Union, east of the Mississippi, with the capital of each.

9. Give the chief commercial and manufacturing centres of France, Germany, and Great Britain, and state for what each is famous.

10. Draw an outline map of Europe, and locate Nice, Hamburg, Drontheim, Milan, Warsaw, Oporto, Heligoland, Corfu, Malta, Arno, Meuse, Ems, Danube with its tributaries.

ENGLISH COMPOSITION.

Time—One Hour and a Quarter.

Candidates will select one of the following subjects :—

(*a*) The Genius of Shakespeare.

(*b*) The Revival of Learning.

(*c*) " In the elder days of Art,
Builders wrought with greatest care
Each minute and unseen part :
For the gods see everywhere.

" Let us do our work as well,
Both the unseen and the seen ;
Make the house, where gods may dwell,
Beautiful, entire, and clean."

EDUCATION.

Time—Two Hours.

1. Define education ? What is the value to a Teacher of a good definition of Education ? Criticise in respect to influence on practice :—

" Pædogogy is the art of making man moral."—*Hegel.*

" Education consists in the ideas and facts gained and properly classified by the learner."

" The object of Education is not the immediate knowledge which it gives, but it is the instrument by which one may learn hereafter."—*Sir. W. V. Harcourt.*

2. State the qualifications of an accomplished teacher.

3. What is necessary that educational experience may be of value ?

4. State concisely the fundamental principles of Science-Teaching. — (Physical Science.)

5. " To give problems, and on the pupil failing to solve them, to show him the solution is utterly useless."—*R. A. Proctor.* Do you accept this statement ? If so, what would you do in case of a pupil failing to solve a problem set ?

6. ' *A*, is a boy of seven years of age, quick-witted, eager to gain knowledge in his own way, indifferent to books and heedless of rules and regulations, but of an irritable temperament. *B*, is a boy of the same age, devoted to play and mere animal enjoyment, indifferent to knowledge of any kind as knowledge, quite contented with his idleness, without any ambition after excellence, sullen when much thwarted, but obedient to regulations because obedience saves trouble. How would you treat these cases ? Explain your rules of action by reference to distinct principles of Education."—*J. Payne.*

7. Discuss *one* of the following :

The use (not the abuse) of text books.
Prizes *versus* rewards.
Much, not many things.

8. Give notes on an introductory lesson on *one* of the following subjects :—

The Tenses.
Fractions.
The Positive and Negative Affections in Algebra.
A Buttercup. (Botany, Fourth Class.)
The eye. (Human Physiology, Fifth Class.)

HUMAN PHYSIOLOGY AND ZOOLOGY.

Time—Two Hours.

1. Enumerate the principal sources of loss and of gain to the blood.

2. You eat a mouthful of beef (mixed fat and lean) and potato, describe the processes it undergoes until all the nutritive matter is absorbed.

3. What are the effects of respiration ? Sketch the respiratory mechanism.

4. Describe briefly the structure and functions of the ear.

---

1. What are the general characteristics of the vertebrata ?

2. Give notes on any dissection you have made, including your preparation of the subject, and mode of conducting the dissection.

Candidates who have not made any

dissections will substitute the following question :—

Name the class and order to which each of the following animals belong:—Pig, Raccoon, Chipmunk, Swallow, Robin (Canadian), Mud Turtle, Hunting Spider, House Fly.

3. Describe and sketch, (*a*) The beak and foot of a passerine bird. (*b*) The jaws and poison-fangs of a venomous serpent.

DRAWING.

Time—One Hour and a Quarter.

Value—50 for each.

Draw a common wheelbarrow standing on a level, at an angle of 43°, with spectator height of eye 3 feet above object. Drawing to be 5 inches long. Show construction lines, wheel facing spectator.

The same subject should then be copied, from the drawing, ¾ size of original drawing.

HISTORY,

Time—Two Hours.

1. State fully, but concisely, the causes which led up to the granting of the Magna Charta, and give the chief provisions of that document.

2. Specify the evils which occasioned the revolt of the English peasantry in the 14th century. What were the results of that revolt ?

3. Give the principal events of the reign of Henry VII. Be concise.

4. What were the Acts of Supremacy and Uniformity ? Give some account of the Court of Star Chamber and of the High Commission Court.

5. "What the Great Rebellion in its final result actually did, was to wipe away every trace of the New Monarchy, and to take up again the thread of our political development just where it had been snapped by the wars of the Roses." (Green's History of the English People.) Explain and illustrate this statement.

6. Tell the origin and course of the war closed by the Treaty of Ryswick.

7. State what you know of the following persons : Owen Glendower, Thomas Cromwell, James Duke of Monmouth, Sir Robert Walpole !

8. Enumerate the wars carried on by Great Britain in Asia during the present reign.

9. Tell the geographical position of these battle fields, and assign the proper dates : Bannockburn, Edge-Hill, Sedgemoor, Lexington, Assaye, Vimiera, Alma.

10. Write brief explanatory notes on the "Secularization of the Clergy Reserves," the "Abolition of the Seignorial Tenure," the "Durham Report."

11. Distinguish the Punic wars of Rome; name the chief leaders engaged, and the principal battles in each. Dates.

12. Give the particulars of the battles of Marathon, Mantinea and Arbela.

BOOK-KEEPING.

Time—One Hour and a Quarter.

1. Give in full your method of closing a set of Books (Double Entry).

2. Classify the following accounts for closing purposes, and explain how each account is closed—Stock, Cash, Merchandise, Balance, Bank, Bank-Stock.

3. Give the Day Book entries that would require the following Journal entries :—

(*a*) John Thomson, Dr	$1800	00		
Bank, ...	1200	00		
To Bills Receivable			$3000	00
(*b*) Shipment to A. Low,				
Dr.	1400	00		
A. Low.....	750	00		
To Merchandise ...			1100	00
" Cash			1050	00
(*c*) John Henry, Dr....	120	00		
To John Henry's consignment			120	00

4. Journalize the following transactions, post and close the Ledger :—

July 1st, 1876. Invested in business, cash, $400 ; merchandise, $4,750 ; a note for $600 in favor of John Hill, signed by W. Willings. and endorsed by H. Cooper, dated May 18th, 1875, at 90 days ; an accepted draft for $500, drawn by H. Simpson on George Dean, May 10th, 1875, at 90 days, and accepted May 15th ; R. Manning's account, $300 ; Real Estate, $3,000. July 2nd. Sold McCrea, Bros., merchandise as per invoice, $200 ; received in payment cheque on Ontario Bank for $100,

their note to balance. July 3rd. Shipped R. Manning $3,000 worth of merchandise, one half from my storehouse, balance bought from J. Heal on my note at 30 days. 4th. Received from R. Manning his second consignment, consisting of 100 bbls. flour, invoiced at $8 per bbl. ; paid freight and drayage on same by cheque, $180. 6th. Sold R. Dunn 100 bbls. flour, from R. Manning's consignment No. 2, at $12.60 per bbl. ; received in payment a cheque on Bank for $300, an order on A. B. for $60, cash for balance. 10th. Closed R. Manning's consignment (No. 2), and rendered him an account sales of the same ; our charges for storages, &c., $20 ; commission, $40 ; R. Manning's net proceeds, remitted in cash, $1,020. 16th. Received account sales of merchandise shipped R. Manning on the 3rd inst., accompanied by a cheque for amount of our net proceeds, $3,500, which I deposited in Bank. Merchandise on hand, as per inventory, $3,250.00.

5. Write out the Business Forms required in the preceding question for the 1st and 2nd of the month.

NATURAL PHILOSOPHY.

Time—Three Hours.

1. Enunciate the Triangle of Forces, and by means of it deduce the Principle of Moments.

Find the resultant of three forces acting in consecutive directions round a triangle, and represented respectively by its sides.

2. A lever without weight is c feet in length, and from its end a weight is supported by two strings in length a and b feet respectively. Find the ratio of the lengths of the arms, if there be equilibrium when the lever is horizontal.

3. A piece of uniform wire is bent into the form of a triangle ; find the position of its centre of gravity.

4. State Newton's Laws of Motion. What is the meaning of "Motion" in the First Law ? What is its meaning in the Second Law, and how is it measured ? What is the meaning of "Action" in the Third Law, and how is it measured ?

Deduce the parallelogram of Forces from the Second Law of Motion.

5. A swing gate weighing 96 lbs. rests on a hinge A, and against a frictionless turning-point B, four feet directly beneath A. Find the strain on the hinge and the pressure on the point, given that the centre of gravity of the gate is 4 feet 7 inches from AB.

What will be the strain and the pressure if a boy weighing 108 lbs. stands on the gate 6 ft. from AB?

6. The radii of the fore and hind wheels of a coach are r and R respectively, and d is the distance between their centres. A particle driven from the highest point of the hind wheel falls on the highest point of the fore wheel. Find the velocity of the coach.

7. A heavy sphere of density 6.8 is placed in a vertical cylinder filled with atmospheric air. Find the density of the air in the cylinder when the sphere, which exactly fits the cylinder, is in a position of permanent rest. Height of the barometer 30 inches, density of mercury 13.6.

8. A body weighs w in air by a common scale with brass weights ; will it weigh more or less by the same in a vacuum ?

PHYSICS.

Time—Two Hours.

1. Describe fully some one experiment by which the mechanical equivalent of heat has been ascertained, and state approximately the numerical result.

It is found that equal weights of water and copper require respectively 100 units and 9 units to raise their temperature by the same amount : find from this fact how much a mass of copper would be raised in temperature by striking a hard non-conducting surface after a fall of 36 feet.

2. How may the quantity of heat in a body be measured ?

To what height would a weight of 193 lbs. be raised by cooling 5 lbs. of boiling water, the temperature of the air being 62 F ?

3. What is the cause of the difference between the specific heat of air at constant pressure and at constant volume ?

4. If a luminous point be seen after reflection at a plane mirror by an eye in a given position, there is a certain space within which the image of the point can never

be situated, however the position of the plane of the mirror be changed : find this space.

5. Give an account of "Frauenhofer's lines" in the Solar Spectrum.

Sodium introduced into the flame of a Bunsen burner produces the well known yellow line in the spectrum of the flame. If, however, the yellow light is made to pass through sodium vapour before it can reach the prism, no yellow light is seen : explain fully the cause of this result. What inference would you draw from this concerning the material constitution of the sun?

6. Describe the construction and explain the action of Holtz's electric machine, in which a small initial charge of electricity is made to give rise to an indefinite supply of electricity of a high tension, and show how its effects can be reconciled with the principle of the Conservation of Energy.

7. Describe the construction of a Grove's galvanic cell, and the nature of the chemical action which takes place in it during the passage of the current.

The current from a battery of 6 Grove's cells, connected in a series, passes through a voltameter containing acidulated water : what is the weight of zinc dissolved in the battery while .36 of a gramme of water is decomposed in the voltameter ?

8. How would you compare the magnetic intensities of two places on the earth's surface ?

9. Describe the construction of the Induction Coil, explaining the special functions of each of its principal parts.

10. Describe the Astronomical Telescope; trace the course of a pencil of rays from any point of a distant object, and find the magnifying power.

If the focal lengths of the lenses be 22 inches and 1 inch, how far must the eye-glass be moved for viewing an object at a distance of 40 feet from the object-glass ?

EUCLID.

Time—Three Hours.

N. B.—Algebraic symbols must not be used.

1. (*a*) The straight line drawn at right angles to the diameter of a circle from the extremity of it, falls without the circle ; and no straight line can be drawn from the extremity, between that straight line and the circumference, so as not to cut the circle. (III. 16).

(*b*) Draw a common tangent to two given circles. How many can be drawn ? *Apollonius.*)

2. (*a*) The opposite angles of any quadrilateral figure inscribed in a circle are together equal to two right angles. (III. 22.)

(*b*) If straight lines drawn from any point on the circumference of a circle perpendicular to the sides of an inscribed triangle their feet are in the same straight line. (*M. F. Jacobi.*)

3. (*a*) If the chord of a circle be divided into two segments by a point in the chord or in the chord produced, the rectangle contained by these segments will be equal to the difference of the squares on the radius and on the line joining the given point with the centre of the circle. What propositions in Euclid follow immediately from this ?

(*b*) Describe a circle which shall pass through a given point and touch two straight lines given in position. (*Appollonious.*)

4. (*a*) To describe an isosceles triangle, having each of the angles at the base double of the third angle. (IV. 10.)

(*b*) Construct a triange having each of the angles at the base equal to seven times the third angle.

5. (*a*) If the vertical angle of a triangle be bisected by a straight line which also cuts the base, the segments of the base have the same ratio which the other sides of triangle have to one another ; and, the straight line drawn from the vertex to the point of section, shall bisect the vertical angle (VI. 3.)

(*b*) The points in which the bisectors of the external angles of a triangle meet the opposite sides, lie in a straight line.

ENGLISH GRAMMAR AND ETYMOLOGY.

Time—Three Hours.

Lady Macbeth,— * * * * * * * * * * Art thou afraid
To be the same in thine own act and valor,
As thou art in desire ? Would'st thou have that
Which thou esteem'st the ornament of life,
And live a coward in thine own esteem ;
Letting I dare not wait upon I would,
Like the poor cat i' the adage ?

Macbeth,— Prithee, peace
I dare do all that may become a man ;
Who dares do more, is none.

Lady Macbeth,— What beast was't then
That made you break this enterprise to me ?
When you durst do it, then you were a man ;
And, to be more than what you were, you would
Be so much more than the man. Nor time, nor place,
Did then adhere, and yet you would make both :
They have made themselves, and that their fitness now
Does unmake you.

(i) Divide into propositions and fully analyse the second sentence in each of Lady Macbeth's speeches.

(ii) Parse 'which' and 'ornament,' l. 4 ; 'coward,' l. 5 ; all the words in l. 6 ; 'man,' l. 8 ; 'none,' l. 9 ; 'durst,' l. 11 ; 'to be more,' l 12 ; 'more,' l. 13 ; and 'that,' l. 15.

(iii) Explain the derivation of *afeard, afraid, valour, ornament, prithee, peace, enterprise, lady, esteem, adhere* and *desire*.

(iv.) What is the meaning of 'break' in l. 10, and of 'adhere' in l. 14 ?

(v.) Scan lines 5 and 6, naming the feet.

(vi.) Point out the figures of speech that occur.

2. Parse the italicized words in the following sentences from Macaulay's letters :

"I will not omit writing two *days running*."

"The great topic *now* in London, is not, as you perhaps fancy, Reform, but cholera. There is a great panic, as great a panic as I remember, *particularly* in the City."

"When Chantery dined with Rogers some *time ago*, etc."

"Her ladyship is *all* courtesy and kindness to me"

"Well, writing to constituents is *less of a plague* to you than to most people."

"*Now that* I had risen again, he hoped that they should hear me often."

3. Distinguish between the following words :—Common and mutual ; stationery and stationary, feminine and effeminate ; sanitary and sanatory ; persecute and torment ; loiter and linger.

4. What information about the following things, namely, port [wine], sherry, nankeen, ammonia, bayonet, cherry, currants, may be obtained from the names they bear ?

5. Define ADJECTIVE and PRONOUN ; state how you classify adjectives and pronouns ; show where you draw the line between these parts of speech ; and explain your views with regard to the parsing of *his, arch, this, all, another, what* and *some*, in the various constructions in which they may occur. Give reasons for your answers.

6. Explain the meaning of orthoepy, idiom, dialect, and metaphor, and give the best definitions you know of letter, syllable, and word.

7. Give examples of sentences in which it is more appropriate to use 'that' 'than' 'who' or 'which.' Explain the reason in each case.

8. Correct or justify, in either case giving your reasons, the following sentences :

"In this poem is a very confident and discriminate character of Spenser, whose work he had then never read."
—*Dr. Johnson.*

"This is one of the most successful works that ever was executed."

"The trade of Marseilles vastly increased since the French have had Algiers."

"He always begins by drawing down his shaggy eyebrows, making a face extremely like his uncle, wagging his head and saying," etc.

ARITHMETIC.

1 Prove the rules for pointing in Multiplication and Division of Decimals.

Reduce to its simplest form

$$\frac{(.075)^5 + (.05)^5}{(.075)^4 - (.075^2\,(.025)^2) + (.05)^4}$$

2. The owner of some city property allows his agent 5% for collecting his rents; the amount which he annually pays for insurance and repairs (and on which he pays no income tax) is $8\frac{4}{7}$ % of his net income ; his income tax at 2 cents $7\frac{1}{2}$ mills on the dollar, is \$198.25 : Find the gross rents from his city property.

3. Reckoning commercial discount at 8%, how many years would a bill have to run so that the holder would be willing to pay something to get it off his hands ? Show that the error in computing commercial discount, instead of true discount, varies nearly as the square of the time, when the time is small, and where the discount is small compared with the debt.

The interest on a sum of money for 2 years is $\$71\frac{183}{100}$, and the discount for the same time is $\$63\frac{17}{20}$; Find the rate per cent. and the sum of money.

4. A Building Society wishes to realize 10% on its loans; the instalments paid to it can be re-invested at 3% per half year; extending the formulæ $A=PR^n$ to include the case of n being fractional, show that the quarterly instalment on a loan of $1,000, payable in six years, is

$$1{,}000\ (1.1)^6 \times \frac{\sqrt{1.03}-1}{(1.04)^{1\ 2}-1}$$

5. A retail dealer bought a quantity of broad cloth and marked it for sale at an advance of 20 per cent. on cost; in measuring it off to his customers he used a false yard measure, by which he gained on the entire sale an additional sum of $39, making on the whole a profit of $379.20: Find the cost price of the cloth and the length of his yard-stick.

6. By the construction of the Canada Pacific Railway, 80 per cent. is added to the debt of the Dominion; for the next fourteen years after the completion of the road $5,000,000 of the principal, in addition to the interest, is annually paid off, and at the end of that time the rate of interest on the national debt is reduced 10 per cent.; if, in spite of these reductions, it is found that the interest on the public debt is still 20 per cent. more than before the increased debt, find the cost of the Pacific Railway.

7. Examine the merits of the following definition: "Four quantities are said to be proportional when a part of the first is contained in the second as often as a like part of the third is contained in the fourth." Give examples of its failure.

Where do you consider that the notion of ratio is first introduced in works on arithmetic?

Given that the distance through which a body draws another in one second varies as the force of attraction; that the force of attraction is directly proportional to the mass of the first body, and inversely to the square of the distance from the centre; that the mass is proportional to the product of the density and volume; and that when the earth's volume and density are each unity, those of Jupiter are 1387.431 and .22 respectively: Find how far a body will fall from rest in one second at the surface of Jupiter, if at the surface of the earth it fall through 16.08 feet in the same time.

8. A person has an estate which yields a net income of £1620, after paying expenses to the extent of 10 per cent. He sells it and invests the proceeds in the $4\frac{1}{2}$ per cents at 96, the income now being subject to charges of 5%, and his net income is £16. 17*s*. 6*d*. less than before: Find for how many years purchase on the gross income he sold his property.

9. English standard gold is $\frac{1}{12}$ alloy, and $44\frac{1}{2}$ guineas weigh one pound troy; the weight of a shilling is $87\frac{3}{11}$ grains troy, and pure silver $14\frac{1383}{4840}$ heavier than an equal value of pure gold. If silver were to fall one per cent. in value, find what change would have to be made in the alloy in a shilling in order that 20 shillings might still be equal to £1, the alloy being supposed of the same specific gravity as silver, and the weight of the shilling unchanged.

10. (*a*) The three sides of a triangle are 20, 30, and 25 respectively: Find the position of the point which is equally distant from the three angles.

(*b*) Two sides of a triangle are 8 and $12\frac{1}{2}$ repectively, and the line bisecting the angle they contain is 6: Find the third side.

ALGEBRA.

Time—Three Hours.

1. Investigate Horner's method of division.

Divide $x^9 - 3x^8 - 31x^7 + 25x^6 + 3x^5 - 8x^3 + 19x^2 + 8x + 10$ by $3x^4 - 21x^3 + 9x - 6$ showing the "final remainder."

Find the value of $2x^5 + 803x^4 - 398x^3 + 1605x^2 - 1204x + 422$, when $x = -402$.

2. If $f(x)$, a rational and integral function of x is divided by $x^2 + px + q$, the remainder is

$$\frac{f(a) - f(B) + af(B) - Bf(a)}{a - B}, \text{ where } a,$$

B are the roots of $x^2 + px + q = o$.

Examine the case where $p^2 = 4q$.

3. Show without actual expansion that

$$\frac{a^4(b^2-c^2)+b^4(c^2-a^2)+c^4(a^2-b^2)}{a^2(b-c)+b^2(c-a)+c^2(a-b)}$$
$$=\frac{(a^2-b^2)^3+(b^2-c^2)^3+(c^2-a^2)^3}{(a-b)^3+(b-c)^3+(c-a)^3}.$$

4. Find the values of x and y that will render the fraction

$$\frac{2z^2+(x-a)z+2b(x-2c)}{3z^2+(y-b)z+3a(y-3c)},$$ the same for all values of z.

5. If the equations $ax^3+bx+c=0$, $a+bx+cx^3=0$ be not identical, and have two roots in common, these roots are imaginary.

6. Show how to find the sum of n terms of a series in Geometric progression.

(1) Show that the sum of n terms of the series $1+r+(1+2r)(1+r)+(1+3r)(1+r)^2+\text{- - - -}$, is $n(1+r)^n$.

(2) Sum to infinity the series $\frac{1}{2.4.6}+\frac{1}{4.6.8}+\frac{1}{6.8.10}+\text{- - - -}$.

7. Explain the notation of functions: prove that if $f(m)=1+mx+\frac{m(m-1)}{1.2}x^2+$ &c., then $f(m)\times f(n)=f(m+n)$.

Show that in the expansion of $(1+x)^n$ the sum of the squares of the co-efficients $=\frac{1.2.3.\text{- - - -}2n}{(1.2.3\text{- - - -}n)^2}$.

8. Solve the equations—

(1) $\frac{x-a}{b+c}+\frac{x-b}{a+c}+\frac{x-c}{a+b}=3$.

(2) $x^4-10x^3+35x^2-50x+24=0$.

(3) $\frac{1}{21x^2-13x+2}+\frac{1}{28x^2-15x+2}=\frac{1}{12x^2-7x+1}$.

9. Give a brief account of mathematical induction, and show that the square of a multinomial is equal to the square of each term together with twice the product of each term into the sum of all that follow it.

Find the sum of the products of the first n natural numbers taken two and two together.

10. If $\frac{x}{a}=y+z$, $\frac{y}{b}=z+x$, $\frac{z}{c}=x+y$, prove

(1) $\frac{1}{a}\cdot\frac{1}{b}\cdot\frac{1}{c}=\frac{1+a}{1-ab}\cdot\frac{1+b}{1-bc}\cdot\frac{1+c}{1-ca}$

(2) $\frac{x^2}{a(1-bc)}=\frac{y^2}{b(1-ca)}=\frac{z^2}{c(1-ab)}$.

(3) $\frac{\sqrt{1-bc}}{a}+\frac{\sqrt{1-ca}}{b}+\frac{\sqrt{1-ab}}{c}$
$=\frac{\sqrt{1-bc}}{a}\cdot\frac{\sqrt{1-ca}}{b}\cdot\frac{\sqrt{1-ab}}{c}$

11. AB is divided in C, so that $AB, BC = AC^2$: from CA is cut off a part CD equal to CB; from DC is cut off a part DE equal to DA; from ED is cut off a part equal to EC, and so on *ad inf.* Show that the points of section continually approach a point C′ such that $AC'=BC$.

12. Eliminate x, y, z and u from the equations

$$a_1x+b_1y+c_1z+d_1u=0.$$
$$a_2x+b_2y+c_2z+d_2u=0.$$
$$a_3x+b_3y+c_3z+d_3u=0.$$
$$a_4x+b_4y+c_4z+d_4u=0$$

13. A railway train travels from Toronto to Collingwood. At Newmarket it stops 7 minutes for water, and two minutes after leaving the latter place it meets a special express that left Collingwood when the former was 28 miles on the other side of New Market; the express travels at double the rate of the other, and runs the distance from Collingwood to Newmarket in $1\frac{1}{2}$ hour; and if on reaching Toronto it returned at once to Collingwood, it would arrive there three minutes after the first train: find the distance between Toronto, Newmarket and Collingwood.

ANSWERS TO QUESTIONS.

NATURAL PHILOSOPHY, SECOND CLASS.

2. $5\sqrt{3}$ lbs. The line of action of the resultant will be perpendicular to that of the 1 lb. force, and will therefore be equally in-

clined to the lines of action of the 6 lb. and the 4 lb. forces.

3. (*b*) 240 lbs. 4. 1½ inches.

5. $\frac{1}{2}\frac{r_1^2 + 3r_2^2 + 5r_3^2 + \cdots\cdots (2n-1)r_n^2}{r_1^2 + r_{22}\, r_{32} + \cdots\cdots + r_n^2}h$,

6. 1.027.

ARITHMETIC, SECOND CLASS.

1. £2 os. 6*d*. 2. $24\frac{55}{209}$ cents.
3. $451.20; $12. 4. $9,500, $16,200.
6. $2,190. 7. 116 lbs.; 136 lbs.
8. Either method gives $1,610.51.
9. 75 cents; 12½cts. 10. (*a*) 63¾ feet.
$1.00; 10 cts. (*b*) 50 feet.

ARITHMETIC, THIRD CLASS.

1. $\frac{71}{100}$. 2. .1, 2.72637. 3. $\frac{817}{1600}$.
4. $4 60. 5. $360. 6. $119.79 +.
7. $260. 8. 6¼, 15 years. 9. $2,480.
10. $1,732.50.

ALGEBRA, SECOND CLASS.

1. (1+m) x—(1—n) y.
2. (x—y) $(x+y)^3$, (a—b) (b—c) (c—a), $(5x^2-1)(5x+x+1)$.
3. Given in question.
4. x—1, $1 + x^{\frac{1}{2}}$.
5. $\frac{(x+y-z)(x-y+z)(y+z-x)}{(x+y+z)^3}$ $\frac{1}{a-b}$
6. $-\frac{2}{3}$, 1.
7. $a''(b'c-bc') + b''(ac'-a'c) + c''(a'b-ab') = 0$.
8. $\left\{n^2-\left(\frac{m^3-2n}{3}\right)^3\right\}^{\frac{1}{2}}$; 2, 3, 4.
9. $\frac{a(c-b)}{a-b}$, $\frac{b(a-c)}{a-b}$
10. Three miles an hour.
11. (*a*) Demonstration.
(*b*) 2,000.
(*c*) Demonstration.

EDITOR'S DRAWER.

NEW INK WEL.—We have before us a sample of a new metallic ink well manufactured by W. Bryce, London, Ontario. It is guaranteed to be non-corrosive by ink, and is sold, we believe, at $6 per 100. We see no reason why it should not give excellent satisfaction.

PERSONAL.—Most of our readers already know that J. C. Glashan, Esq., late Inspector Division No. 1, Middlesex, and editor of our TEACHER'S DESK has been appointed Inspector of Public Schools, for the City of Ottawa. Mr. Glashan is well qualified for the duties of the important office to which he bas been appointed, and while regretting his departure, we cordially wish him success in his new sphere of labor. We have his promise that as soon as possible, after getting settled in Ottawa, he will bring up arrears on the "Desk."

EXAMINATION QUESTIONS.—In this No. we give the Examination Questions at the recent County Board Examinations in full, with one exception, the music paper. We had intended to give a part this month, and the remainder in September, but on second thoughts considered that it would be decidedly better and more convenient for teachers to have all in one No. This must be our apology for crowding out much interesting educational intelligence, and other matter. We hope to be able to give solutions in future issues.

A LIBERAL OFFER.—We have completed arrangements to club the TEACHER, with *Our Home Companion*, a monthly journal published in London, Ontario, and can now offer the two on exceedingly favorable terms. The *Home Companion* is an excellent magazine, brimfull of choice reading matter, and the publishers give away to every subscriber a premium crayon, worth many times the price of subscription. These crayons are very superior works of art, printed on heavy Bristol cardboard, size 22 × 28 inches, and there are six different subjects to choose from. The following are the subjects: "Love is as a Thread"; "Yes or No"; "Gathering Ferns"; "Going to Work"; "The Offer"; "Accepted." The price of the *Companion* is 50 cents per annum, and the Crayons are said by competent judges to be worth $1 each, but having been contracted for at a great reduction from wholesale, we are now able to make the following liberal offer, which will hold good during the month of August: For $1.50 we will send the TEACHER and *Companion*, (with crayon,) to any address, post-paid for one year. This very liberal offer should bring a large accession of subscribers.