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Editorial Notes.

IT is said that when Cardinal Satolli came to America, less than two years ago, from Italy, he was without any knowledge of the English language. A few weeks since he delivered a discourse in English at a church dedication. This shows what a clever foreigner can accomplish in learning our language by dint of application and determination. It shows also that the language cannot be so very hard for a foreigner to acquire.

BEING educated is simply learning to think. What, after all, is the sum and substance, the alpha and omega, of all true education? Is it not thinking power? This it is that marks the difference between one man or woman and another, so far as education is concerned. Why is it that one man's or woman's opinions carry with them so much more weight than those of another? It depends, as we all know, upon the kind of man or woman behind the opinion. If there is behind it a mind which has learned to think—to look on both sides, or, rather, on all sides of a question, the inside included, the opinion is of value, not otherwise. The question is not, has the individual been through college or university, but has he learned to think?

"WUZ you at Mrs. Thompson's las' night?"

"Yes; but they had went to church, and I had to wait till they come back."

"Kate wuzn't out, wuz she? I thought she had the newralagy."

"Oh, she's better, but she wuz pretty bad the Toosday night I was down there. They wuz two doctors with her."

Someone—the editor of one of the departments of the Saturday *Mail and Empire*, we think—gives the foregoing as an accurate report of a part of a conversation actually overheard between two girls, in their teens, in this city. Do you ever hear anything like it in your school or playground? Nothing quite so atrocious, it is to be hoped. But our own observation convinces us that you do, or may, if you listen, hear much terrible mangling of the Queen's English every day among your pupils, unless you have an exceptionally well-trained band in your school. What are you doing to correct the evil? It is not, of course, your fault, or that of your predecessors, primarily, at least. Your pupils did not learn their conversational English in the school. But surely they ought to unlearn a good deal of it there.

DR. JOHNSON is credited with having said, "I would rather have the rod to be the general terror to children, to make them learn, than tell a child, 'If you do this or that you will be more esteemed than your brothers or sisters,'" and to have argued the point as follows: "The rod produces an effect which terminates in itself. A child is afraid of being whipped, and gets his task, and there's an end on't; whereas by exciting emulation and comparisons of superiority you lay the foundation of lasting mischief—you make brothers and sisters hate each other." The gruff old philosopher may have been right or wrong in his preference of one bad motive force to another. It does not seem to have occurred to him, or, in fact, to many in his time, that there might be a more excellent way than either, one free from the moral objections of both methods. Is it a modern discovery that a thirst for knowledge is innate in a healthy mind, and that the child who is properly treated in early years will take to study as naturally and eagerly as to tempting fruit or athletic games? How many of our readers have made or proved the discovery for themselves?

THE teacher who would read to the utmost profit often suffers from an embarrassment of riches. There are so many books even in our own language that are good, and that one feels he ought to read, that one is in danger of becoming bewildered and discouraged and failing to read anything properly. To those in such a plight it may be helpful to remember that after all, within the wide range of books that are books, it matters less what we read than how we read. The main point is, Does the author stimulate thought? Does he manifest and inspire zeal for truth, for pure, unadulterated truth? It is good to be able to agree with our book, to feel that it is leading us into the truth; but often, from the point of view of mental and moral profit, it may be almost or quite as stimulating to read a clever author who keeps us constantly on the warpath, criticizing his reasoning, quarrelling with his assumptions, and rejecting his conclusions. It used to be said by the friends of a certain great thinker that it was almost painful to watch him read, the marks of intense mental activity and conflict which he kept up were so apparent in his face and gestures. We repeat, it is important what we read, but still more important how we read.

PROFESSOR TYNDALL once said in the course of a lecture delivered at the Birbeck Institution on "My Schools and Schoolmasters," referring to his own experience as a teacher in Queenwood College, Hampshire: "At Queenwood I learned, by practical experience, that two factors went to the formation of a teacher. In regard to knowledge he must, of course, be master of his work. But knowledge is not all. There may be knowledge without power—the ability to inform without the ability to stimulate. Both go together in the true teacher. A power of character must underlie and enforce the work of the intellect. There are men who can so rouse and energize their pupils—so call forth their strength and the pleasure of its exercise—as to make the hardest work agreeable. Without this power it is questionable whether the teacher can ever really enjoy his vocation; with it I do not know a higher, nobler, more blessed calling than that of the man who, scorning the 'cramming' so prevalent in our day, converts the knowledge he imparts into a lever to lift, exercise, and strengthen the growing mind committed to his care." Those are golden words. Every teacher may profitably ponder them, and ask himself to what extent he possesses that "power of character," and what he is doing daily to cultivate it.

TO THE COUNTY MODEL SCHOOL STUDENTS.

THIRD ARTICLE.

In this article we shall address you on the subject of "School Management," and shall restrict the meaning of this term to what is usually understood by school government, or the maintenance of proper discipline, without considering it in its broader relation to everything which pertains to the proper conduct of a school.

When discussed from this standpoint, the two main factors to be considered are the pupil and the teacher.

During the past ten years the greatest educational progress has, perhaps, been made along the lines of investigation of what is commonly called the science of education. The teacher has been asked to study mental action, to grasp the underlying principles of education, in order that he may so frame his methods of teaching that they will be in harmony with the natural laws which govern the actions of the mind. Intelligence in the student is aimed at, rather than the imitation of methods, however excellent these may be.

The same practice should be observed in the training of students for successful school management. We aim to teach children in a certain way in order that our teaching may be in harmony with well-defined laws, and we should aim to govern them in the same way for the same reason. A thorough knowledge of child-nature is as necessary in the latter case as in the former.

It has been well said that "we teach the child in a certain way because he is what he is," and the same truth should regulate our management of him. Without consideration of this the teacher is working in the dark, and in trying to govern by arbitrary rules is like a person fitting the body to the dress, rather than the dress to the body.

In order that government of children may be successful it must be in harmony with the nature of children, and due regard must be had to the intelligence and to the motives which stimulate their mental action and influence their conduct.

Writers on this subject usually classify mental phenomena under three headings and in this order: Knowing, feeling, willing, or the intellect, the emotions, and the will. This order is not optional; it is the natural one, and is determined by the relation of cause and effect which exists among the divisions. Our voluntary acts are produced as effects from these antecedent causes working in the order given. We do a certain thing when we have *willed* or decided to do it; our decision to do it was the product of our desire or *emotion*, and the desire was the result of our *knowledge* or expectation of what would follow if the act were performed.

To start from the beginning, we must first *know* what the result of an action will be, we must *desire* the result, and we must *will*, or determine, that the act *shall* be performed, in order that the result may be produced and the desire of the mind or heart—as we say—thereby gratified.

To illustrate: You read in the press of the outrages that have been perpetrated in Armenia, and of the painful distress which has been caused. You feel an emotion of pity, and of a desire to assist in relieving the suffering, and you determine to contribute something towards this end. Your physical act of sending assistance was the result of these three stages of mental action in the order given. If you had not heard of the suffering caused by the cruelty of the rulers, there would have been no pity on your part, and, of course, no determination to assist or sending of aid.

It does not necessarily follow that the first step of knowing must always be followed by the others. There may have been, in your case, the knowledge of the cruelties without any determination to assist, or even any desire to do so; or there may have been the knowledge and an emotion of pity, and yet no will to produce the act of assisting. But what you should note is, that if such an act had been performed, all the preceding conditions, or causes, must have been present. The understanding of this fundamental law gives us a clear conception of what is commonly called the "doctrine of motive," which is really the mainspring of all human action. It influences us in our earliest childhood, and directs and controls us until the end of life.

We cannot, in this article, do more than merely mention a few of the motives which the teacher may place before his pupils for the purpose of influencing their conduct. Different motives must be brought before children of different ages. A child of twelve years of age may be influenced by a motive which would be utterly valueless for a child of five, because the former understands it, while the latter does not. The motive must first appeal to the intelligence of the child, and if it is beyond the intelligence it is useless.

With young children the approbation of the teachers and of parents may always be used as a proper motive. Approbativeness, or the love of praise, is a powerful incentive to action. When you see a modest, sensitive little child leaning its head to one side it is simply saying by its action: "Praise me, and I will do anything for you." The young teacher need not be told that he must be judicious in awarding praise. The child must know that it is merited, and the teacher must remember that a surfeit of anything destroys the appetite. It is better, however, to praise small children too much than too little.

The attainment of an honorable position in the school may also be held out as a motive. To this end a record of the day's work and of the deportment should be made. Change of position in the class, or in the order of seating, will also serve as a stimulus to action, and the change will afford a relief for the sameness which so often wearies children, because it is at variance with their natural instincts.

The gratification of curiosity is, perhaps, the most powerful motive that can be used with small children; and it need not be limited to this class of pupils. Archbishop Whately says: "Curiosity is the parent of attention"; Bacon says it is the "seed of wisdom"; and Hamilton says: "Wonder is the mother of knowledge." The teacher who can arouse the curiosity of his pupils and invoke their own efforts to gratify it—who, instead of telling or doing the work for them, can lead them along, in their natural eagerness for information, to discover for themselves—is the highest type of a teacher. He rewards his pupils with the joy of discovery, and develops a spirit of self-reliance which will, perhaps, be of more permanent benefit than all the information conveyed by the teacher.

With more advanced pupils the perception of utility is, perhaps, the greatest motive which incites to effort. When a pupil comes to see the advantage of his school work, and is filled with ambition or desire to attain a certain end, the teacher has simply to direct his efforts, and has often to restrain rather than to urge. The child's motive power is from within rather than from without.

For the general direction and government of conduct the highest and best motive is the consciousness of right. When this motive is once established among pupils it elevates the whole tone and spirit of the school, and makes school management a very easy matter. It develops self-government, which should be the aim of all discipline, and lays the foundation for future good citizenship.

We have devoted the greater part of our article to the pupil, because we particularly wished you to consider his relation to the subject under discussion, and we can add but a few lines upon the teacher and his efforts to secure good school government.

We would at the outset warn you against giving undue prominence to good order. However necessary, or however indispensable it may be, it should ever be regarded as secondary—as a means to an end. Teaching, which embraces the developing of the powers of the child and imparting instruction, should always be your main purpose. Government is only a means to an end, but it is not the end. Government is for teaching, not teaching for government. Though unusual, it is not impossible to find schools in which there is good government and very indifferent teaching. It is not enough to have a quiet school; there should be a working school, and where there is work and life there must, of necessity, be some noise.

The teacher should aim to secure such order as is consistent with earnest work, but he must not expect absolute stillness where forty or fifty children are at work. Natural activity, the love of change, and restlessness are inherent in children, and to regard these as breaches of discipline is unwise, if not, indeed, an injustice and a positive cruelty to children.

We will close this article by warning you against making the governing power too conspicuous. The most successful

school management is always found where it is secured with the least possible manifestation of the means to enforce it. The constant exercise of authority and of effort to establish it is never seen in the best conducted schools. Let your pupils be ever conscious of your reserve power, but do not bring it too prominently forward.

Special Papers.

GRAMMAR IS NOT FOR BABIES.

P. M. MAGNUSSON.

"The ideal course of study is yet to be made," is a sage remark of Dr. Kiehle's, recorded in these columns some time ago. It is the duty of every teacher to contribute his mite to this not-yet-made ideal course. If the reader and editor have patience with us, we propose to do our duty and discuss a few of the leading topics of the subject. Let us begin with

GRAMMAR.

Grammar is not a study for children. This can be proved. First, no normal child ever fell in love with grammar. Children have no intrinsic interest in the definition of a verb. They may, to be sure, manifest a feverish interest in the subject when it leads to prizes or helps them to gain the good-will of the teacher or to satisfy the ambition of being a good scholar. But borrowed interest like this is nothing better than a crutch on which a study must lean when it has no natural legs of healthy intrinsic interest of its own to stand on.

"But," says the sternly moral objector, "why should we pander to the corrupt tastes of the little sinner in our schoolroom? If grammar is good for them, they should be made to take it and swallow it whether it interests them or not." But suppose grammar *isn't* the best thing for the child, then what? And, in fact, the evidence against grammar is overwhelming. Children will not and cannot form *explicit* concepts of general principles (laws) except in a most rudimentary form. Though they know, and act upon the knowledge, that every particular apple will fall, they never generalize this into the law of gravitation. They think "sweet sugar," never "the sweetness of sugar," unless subjected to some hot-house form of education. Explicit abstractions and generalizations are and ought to be an abomination to the child. The business of the child is to get acquainted with the *facts* around him, and to be satisfied with an implicit knowledge of the laws that makes these facts what they are. Now, what is grammar but a bundle of general laws? Verb, predication, case, modify—nothing short of a logical definition can nail down any one of these. To the normal child such concepts are and ought to be unintelligible, for if he is healthy he still lives in the realm of things.

Grammar has been a very much over-estimated study. It is not half as valuable as it has been supposed to be. Grammar is not the "science by which *we* learn to speak and write correctly." The best Greek, for example, was written by men who would not have recognized a rule in grammar if they had met one. To this day we learn to speak correctly by the same method by which we learn to speak incorrectly—by rote. Correct language is a mere matter of habit, not a matter of rules. Whether our ear shall detect faulty constructions, our eye correct wrong spellings, and our tongue keep on the path of the King's English, depends, according to modern psychology, on the channels for nerve currents in Broca's convolution in the motor zone of the cortex of the cerebrum. Nervous "discharges" are likely to follow the paths of former discharges; this is the whole secret. Practice on the right forms of speech will furnish these channels. No amount of theories and rules will give proficiency in anything but said theories and rules. Grammatical rules are of practical value only in the conscious and painful correction of wrong habits in language. As we are all fallible creatures, and as the language we hear is not always perfect, we need something by which to correct ourselves. Two pages of simple directions would, however, do more for the child than all the grammars published.

Happily, most have gotten away from the notion that grammar is a "practical" study, aiding people to any great extent in the correct use of language. But the friends of grammar propose to fight it out on higher grounds. Grammar is supposed to give such excellent mental discipline. The theory of the disciplinary value of subject has, however, been greatly modified by the results of psychological experiments of late years. The theory of apperception, which is now fairly established, asserts that the mind acquires new knowledge only by means of former knowledge; that we can understand that only which can in some way be assimilated to our old stock of knowledge. The content as well as the form of acquired knowledge is necessary in the acquirement of new. There is no abstract muscularity of the mind whereby exercise in the acquirement of any kind of knowledge will help in acquirement of every other kind of knowledge, however different. The best way to become a skilful physicist is to experiment in physics. Writing doggerel Latin hexameter will not bring him to the goal as quickly, at least, as if he stayed in the physical laboratory. The business of the true teacher is to build up in the mind of his pupils suitable apperception-masses for the life-long use of the pupil. How stands the account of grammar here?

The apperception-masses furnished by grammar are meagre, unmoral, and in many instances not yet arranged into any logical system. Hence grammar does very little for us in the great problem of understanding human life. What of the beauty, truth, sublimity, or meaning of a work of art, an event in history, a political argument, an industrial enterprise, or a scientific theory can be revealed, tested, or assimilated by the paradigm of the pluperfect tense, or the rules of the objective case? Grammar is also unmoral, for it does not help in the cultivation of a fine sense of right and wrong, a love of justice and mercy, and an appreciation of what is noblest and purest in humanity. Grammar is a logical, not a humanitarian, study. It does nothing for the highest kind of culture.

Dr. Harris is right when he makes language the central study. All the thoughts that men have in common, all the civilization that makes the world worth having, has language for its form. But language is not grammar. Every college is full of sophomores who know nine truths of Latin grammar, but next to nothing of the Latin language.

Grammar has a place, however, in education, but its place is not with children. Until fourteen years of age they should go scot free from it. In the High School grammar should be given a place by the side of its sister science, formal logic.

Horror-struck conservatives will exclaim: "Would you then send the majority of our pupils into the world without the ability to distinguish a noun from a verb!" Yes, indeed, a thousand times rather than to have the citizen ignorant of the very foundations of the government he is supposed to support. I would rather have the stonemason ignorant of the passive periphrastic conjugation than to have him handle granite and sandstone daily and never suspect that they have a history. Our pupils were much better off if they could trade off a few tons of sentence analysis and parsing for an appreciative knowledge of "In Memoriam," "Faust," and the "Nibelungen Song."

But the fact is, our pupils have no grammar to trade off. After five or six years of anguish and drudgery over grammar, ninety per cent. of our pupils leave school without anything to show for their grammar except some half-understood or wholly misunderstood terms and phrases—by which, however, they generally succeed finally in deceiving themselves and their teachers into the belief that they know grammar.

Let us, therefore, brethren and sisters, do what we can to stop this farce of pretending to teach one of the most difficult and unsettled sciences to babies. May our child-study net us at least this resolution as a practical result, and then it has not been in vain.—*School Education.*

Since the moral effect of reward depends on its being recognized as the fruit of virtuous exertion, school rewards can only have such effect when they are conferred, not on the ground of absolute attainments, which is largely determined by natural superiority, but on that of individual progress.—*Sully.*

Hints and Helps.

HELPS IN SCHOOL LIFE.

BY——

"If any little word of mine
Can make a life the brighter,
If any little song of mine
Can make a heart the lighter,
God help me speak that little word,
And take my bit of singing,
And drop it in some lonely vale,
To set the echoes ringing."

Let us each try, as the days go by, to carry out the sentiment of this little stanza in our school life. The more we say of these "little words," the happier our lives become. The children soon catch the spirit and are loving and kind to one another.

Opening the day's school duties in a cheerful, interesting manner has been found to be a great help all through the remainder of the day. The children enjoy so much a cheery hymn or song, and then an interesting story read, with a good moral lesson inwrought, acts as an incentive to kindly deeds all the day.

Then we must remember

"'Tis working with the heart and soul
That makes our duty pleasure."

And if we count *our* duty pleasure, we will not see many frowns on the faces of our pupils.

To allow no unkind thoughts to enter into our hearts we must let a Higher Power than ours rule there, and not be too strict in regard to the discipline those who are not yet accustomed to school routine.

It has proved to be a source of help and interest, to those of the second or third year's work, to read little stories that have been clipped from newspapers or old magazines, and pasted on cardboard.

Cardboard may be used also in writing down the addition table for the day, as the smaller children prefer to have the table in this way, rather than to learn from the blackboard.

RELATIVE PRONOUNS.

Children find some difficulty in distinguishing these pronouns unless well drilled in their use. If taught, at first, in an attractive and interesting manner children will remember much better, and pick them out much more readily.

The following method, though it has, perhaps, some defects, has proved to be effective:

First, have written on the blackboard such sentences as:

Those girls who are kind are loved.

The horses which my uncle drives are white.

The tree which you see was planted by my father.

The pupils have learned already what a clause is, therefore they may be asked to select the principal clauses, and have the subordinate clauses bracketed.

Then questions might be asked, as, What word goes before who? which? that? and receive in each case the respective answer, girls, horses, tree.

Then, to draw their attention still more closely, it might be said in a cheerful manner:

"Now we know that almost every person has some relative, that is, someone to whom he or she is closely related in some way; but we now see that it is not only persons who are related, but words also. This word 'girls,' which you say 'goes before' 'who,' is related to the relative which follows, as its antecedent." (It might be stated that antecedent means "something that goes before.") So on with other sentences, until they readily pick out the antecedent. Then show also that the pronoun introduces a clause.

Then the name might be given, and the definition drawn that a relative pronoun is one that is related to an antecedent and brings in a clause.

He who does one fault at first,
And lies to hide it, makes it two.

—*Watts.*

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Editorials.

WHAT SHALL THE SCHOOLS TEACH?

IT is evident that the answer to the question, What shall the schools teach? depends upon the answer to the previous question, What is the primary object of the teaching in the schools? Is it to impart useful knowledge, or to strengthen and develop the mental faculties? In other words is learning, or discipline, the chief end to be kept in view? Every teacher, worthy of the title, must have a theory of his own on this matter, and that theory will greatly influence, if it does not completely mould, all his methods of teaching. Now, if it were so arranged in the order of nature that we were obliged to choose absolutely between the two things, we should have little hesitation in making the choice. If it could be shown that the studies which are best fitted to train and enlarge the mental faculties were precisely the subjects bearing least relation to practical life, and so conveying the least useful information, while, on the other hand, the subjects which have a direct bearing upon the future occupations of the pupils, and supply them with information which they can turn to account in active life, were worthless for mental cultivation, that is for true educational purposes, we should feel obliged to choose the former. We could not do otherwise. The business of the schools is to educate. To give them up to processes which have no educational value would be to change their whole nature and purpose, and to make them mere shops for teaching trades and professions. As a result there would be no such thing as public education. There could then be no progress. The masses would go forth to their bread-and-butter pursuits with untrained minds, and would do their daily tasks as unintelligent animals.

Take even the highest view of the proposition and suppose that the end to be kept in view in the schools is not education but learning, and a very similar result is reached. We should simply be turning out a generation of dogmatists. The student who was taught to neglect processes and to fix his eye upon results, to cram his memory with propositions, and conclusions, and generalizations, and accept them as knowledge and truth, would be as useless and unprogressive in the world of thought as the workingman trained on such principles in the world of knowledge. We have the highest authority, supported by the concurrent testimony of all earnest searchers after truth, for believing that the greatest sum of human knowledge is but as a group of insignificant atoms beside the towering mountains of human ignorance. The little pebbles of the known we scrape together so laboriously, and prize so highly, are gathered on a narrow strand bordering the illimitable ocean of the great unknown. In view of the great sum of things he would like to know, which lie beyond his reach in the infinite gloom, the wisest philosopher is but

> "An infant crying in the night,
> An infant crying for the light,
> And with no language but a cry."

The point we wish to emphasize was put very clearly and forcibly by Mr. Gladstone, in an address delivered some years ago at Liverpool. Referring to the popular cry for so-called practical education, he strenuously denied that "the main object of education is to stock one's mind with knowledge, as a shop is stocked with goods," or that "the wants of life can be met just like the wants of customers." "Doubtless," said he, "one of the purposes of education is thus to furnish materials for future employment, but this is its lower, not its higher, purpose. The fabric of the shop takes no benefit, though it may take damage, from the wares it receives, but the greatest and best use of the information which is imparted into the mind is to improve the mind itself.

But admit all this and what follows? Whither are we being led? Bread must be earned. Practical work must be done. In all departments of human activity men must have a stock of information, of stored-up knowledge, at their hands, ready for use. However incomplete and unsatisfactory from the philosophical point of view, in its relation to the actual needs of everyday life, this information, this knowledge, is absolutely indispensable. Men must appropriate and use and profit by the experience and the knowledge gained by those who have gone before them. To neglect to do so, to refuse to accept anything from the past, to attempt to learn everything by one's own efforts, would be the height of folly and absurdity. It would render any progress of the race impossible, since it is the condition of all progress that each generation starts where the previous one left off, using its accumulated gains as stepping-stones to still higher advancement,

Moreover, the hard conditions of actual life are such that the great majority are forced to begin the battle at a very early age. The average parent cannot afford to send his sons or daughters for years to school or college and afterwards commence to train them for the duties of actual life. If a choice has to be made between education and useful knowledge and skill, stern necessity will compel, in a great majority of cases, to choose the latter. If the schools can give no preparation for the practical work of life, the people will have to do without the schools, and seek elsewhere the preparation which is absolutely indispensable for life-work.

Here, then, is our problem. How shall it be solved? We have, of course, purposely exaggerated the two views in order to make the distinction and contrast more apparent. But such a problem has always existed, and the educator has felt himself forced, to a greater or less degree, to choose between the horns of a dilemma.

But does such a dilemma really present itself in the nature of things? Is it not rather the outcome of mistaken pedagogical methods? May not the two apparently conflicting theories be completely harmonized and merged into one? May not both great educational ends be gained at one and the same time, and by means of one and the same process? This is the great educational problem. We believe the question may be answered in the affirmative, that the problem is being solved, is already half solved, by the bet-

ter views and processes which are being adopted. But along this line there is still great room for educational enlightenment and progress.

VIVISECTION.

THE *Popular Science Monthly* for October contains a strongly written article by C. F. Hodge, Ph.D., Assistant Professor of Physiology in Clark University, in defence of the practice of vivisection. As the subject is to be continued in succeeding numbers, it would be premature to attempt to estimate the strength of the case the writer is able to make out in support of this revoltingt form of scientific experimentation. The question is one of intense interest from the humanitarian as well as from the scientific point of view. It is, moreover, in various respects, intimately related to the teaching profession. The controversy has been carried on with great warmth in England, where the Victoria Street Society for the Protection of Animals from Vivisection has been for many years waging a most energetic and, to some extent, successful war on the practice. A similar society in the United States is also prosecuting a more or less vigorous campaign on behalf of the helpless victims of torture practised in the sacred name of science.

We meant to state the case without bias. The use of the word "torture," and others, proclaims our failure. Whether this word is justifiable in the case depends, evidently, upon the prior question, whether the end justifies the means; whether, in other words, the actual and prospective benefits conferred, and yet to be conferred, on suffering humanity, constitute an ethical warrant for the infliction of any degree and amount of pain, often necessarily of the most excruciating kind, upon the inferior animals. It is, indeed, hard to write dispassionately on a question which appeals so powerfully to human sympathies.

This problem in moral arithmetic requires for its solution that certain conditions, or laws of proportion, be established, or accepted, as a basis for the proportion. It must, for instance, before any definite conclusions can be reached, be known what is the ethical relation between the suffering, or the life, of a human being and that of one of the lower animals. Are we all ready to accept as an axiom that the life, or even the convenience or comfort, of a human being, not only outweighs that of a myriad of lower animals, but that no proportion exists between the two? If we say "Yes," as most persons will probably do, it logically follows that, if it can be proved, or even shown to be probable—may we not even say *possible?*—that by the infliction of the most intense agony upon ten thousand dogs and cats, and cows and horses, the life of the most worthless specimen of humanity can be prolonged, all that fearful sum-total of suffering is to be counted as nothing in the scale. How many of us would purchase a prolongation of life at such fearful cost of animal agony? May we not safely say that there are many who would indignantly refuse to do so? Which action would accord most closely with our instinctive, or Bible-taught, ideal of the noblest manhood or womanhood?

But while our readers are working out this problem it would be unfair not to mention another position suggested by Prof. Hodge's article. One of the arguments urged in behalf of the dismal experiments of the vivisectionist is that very many, probably most, of those experiments are made chiefly for the sake of the animals themselves. The number sacrificed at the shrine of scientific curiosity is, after all, we are told, small in comparison with that of the animals of the same species which will, it may be expected, be saved from suffering and death by the discovery of an antidote, or prophylactic, for this or that fatal disease, which is carrying off those animals by hundreds of thousands every year. This is certainly one of the most plausible arguments in support of the practice. Two things must, however, be proved before it can be accepted as valid, viz., that the experiments of this or that particular would-be experimenter are likely to promote the desired result, and that that result could not just as well have been reached along some other line of investigation, not involving so appalling a sum of vicarious suffering.

Great stress is laid by Professor Hodge upon the example, and, as he would argue, sanction, given by nature, in the relations of animals to one another. "Here we see the weaker preyed upon by the stronger mercilessly, and behold the array of vivisectional instruments—the teeth and jaws, the beaks and talons, the claws and fangs, developed for this purpose." Two brief answers, or rather suggestions of the direction in which answers may be found, must suffice for the present. First, the argument proves too much. Nature is scarcely less prodigal of human life than of that of the lower animals. If her example can be pleaded as a sufficient sanction for vivisectional experiments upon the latter, why not upon the former? And as a matter of fact we know that the tendency towards experimentation upon living human subjects is very strong, and is not always successfully resisted. The records of the Pasteur Institute, *e.g.*, tell a sickening tale of experiments performed upon patients in the shape of the administration of weaker or stronger preparations of the various kinds of virus which are its stock-in-trade, and there is too good reason to fear that the dread of being experimented upon, which is sometimes felt by poor patients in the large general hospitals, may not always be wholly groundless. Second, there is good ground for the inference that nature, in many cases at least, has made merciful provision against the intense suffering which must otherwise be the inevitable outcome of the preying of the stronger upon the weaker animals. Witness the evident paralysis which seizes the mouse which the cat makes its plaything before devouring it. The testimony of men who have been rescued from the jaws of lions and tigers corroborates the inference that the stupefaction produced by fear, or by some subtle influence radiating from the savage beast, goes to confirm the supposition.

We have left the crucial ground of objection with which Professor Hodge deals, viz., the alleged demoralizing influence of the practice of vivisection upon all who have to do with it, to the last. That most important phase of the subject, also the question of fact as to the alleged discoveries beneficial to humanity, which have been derived through vivisectional experiments, and which could not have been otherwise derived, must be left for another occasion. We close for the present with the expression of a hope that nothing partaking even remotely of a vivisectional character exists in connection with the scientific experiments practised in any Canadian school, primary or secondary, such as have in a few instances shocked the sentiments of the community in connection with certain schools and teachers across the border.

The reproduction of an article from some other periodical does not necessarily mean that the editor approves of everything in that article, though, if strong exception is taken to any of its teachings, attention is usually called to the fact. That is what we had intended to do when we marked the paper by Mr. P. M. Magnusson, on "Grammar is not for Babes," for reproduction from our contemporary, *School Education*. We may yet have something to say upon the subject in a future number. To the main assumption that underlies Mr. Magnusson's article, as to what grammar is, we should strenuously object. We do not think that any such distinction, or contrast, as the writer seems to take for granted, between grammar and language exists. Grammar, properly conceived, is simply the science of language. Hence every truly helpful language lesson must necessarily be a lesson in grammar. But of this more anon.

High School Entrance and P. S. Leaving Department

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With the assistance of several special contributors.

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Entrance Literature.

THE BAREFOOT BOY, BY WHITTIER.

The teacher will not forget to see that the members of the class are familiar with the general outlines of Whittier's personal history. After the lesson has been studied, the time of one day's lesson might be profitably given to a talk on the poet's life, times, and character.

PLAN OF THE POEM.

A description of the appearance of a typical barefoot boy; the conditions of country boyhood in general as regards play, sleep, health, and especially the wide range and material of a country boy's knowledge and his full communion with nature; the simplicity and beauty of his home life, nature still being his minister; a counsel to present innocent enjoyment in view of the inevitable future hardships of labor and perhaps of the sorrows of sin.

EXPLANATORY NOTES AND QUESTIONS.

Lines 1-8.—Observe closely the different elements in the description, vividly picturesque, notwithstanding the reckless way the poet runs about from the feet to the cheek, then to the pantaloons, back to a *sound* from the lips, then to the color of the lips, then the face and the hat. Are the points for description well taken?

l. 8. *Through . . . grace.* — Condensed expression. Through the rent in the brim of the hat, which is worn jauntily and gracefully, a part of the grace being the dilapidation of the hat.

l. 9. *From my heart . . . joy.*—Repetition of the idea in l. 1. See further repetition in the poem.

l. 10. *I was . . . boy.*—Is there any relation in meaning to the foregoing or following lines, or is the line simply exclamatory?

l. 13. *The doctor's rules.*—What are some of these rules? How far may boys safely go in ignoring them?

l. 14. *Knowledge . . . schools.*—Change the negative expression to a general positive having the same meaning.

l. 16. *Wild flowers . . . place.*—Country pupils might be asked to illustrate, naming the most characteristic flowers of the seasons and the places where they are to be found.

l. 17. *Flight of fowl.*—When the birds come and go in their migrations; perhaps, also, mode of flight, as no two kinds of birds fly just alike. What birds first come in spring to Ontario? Compare the flights, say, of the wild duck and the kingfisher.

l. 18. *Tenants of the wood.*—What are some of the creatures meant here, and what habits of theirs would the boy know?

l. 19. *How the tortoise . . . shell.*—Does this mean merely that the boy knows the manner in which these animals act in the cases mentioned, or, rather, that these are the features or characteristics that he notices most, knowing many others?

l. 21. *Sinks . . . well.*—No allusion to a cavity for water; the word "well" shows that the poet needed a rhyme for shell and cell, and the mole burrows round holes, which, though usually horizontal, in some places come vertically to the surface.

l. 22. *How the robin . . . young.*—Is this the manner or the material of the feeding, or both?

Groundnut.—Defined by the "Century Dictionary" as "the *apios tuberosa* of the United States, a leguminous climber with small tuberous roots."

l. 27. *Cunning.*—Skilful. Compare "cunning workmen"—Old Testament.

l. 28. *Walls of clay—i.e.*, the hive of the wasp. *Architectural plans—i.e.*, the result of the plans, the symmetry and strength of the nest.

l. 32. *Eschewing.*—Is it nature as a teacher keeping clear of books, or is it the boy as a learner eschewing books and going to nature? Are books, then, of no assistance, not even in the study of nature? Whittier perhaps refers to the exclusive attention given in his day to such studies as Latin grammar, to the entire neglect of natural science.

l. 33. *Nature . . asks.*—What precisely is meant by nature here? How does nature answer? Does nature answer all the boy might ask, as, for instance, how is it that of two trees growing side by side one produces sweet apples, the other sour? Yet show that the physical sciences are being built up from the answers of nature to our questions. Note that we question nature both by observation and by experiment as the boy did.

l. 34. *Hand in hand . . joy.*—Compare the extract from Bryant's "Thanatopsis," written when but a boy:

"To him who, in the love of nature, holds
Communion with her visible forms she speaks
A various language; for his gayer hours
She has a voice of gladness, and a smile
And eloquence of beauty."

l. 36. *Part and parcel.*—A commonplace phrase to be taken as a whole. The line means that the boy shares in all the joys of nature, and that nature rejoices in him.

l. 42. *Regal tent . . monarch.*—Observe the situation carefully and the manner in which the idea of royal splendor is introduced and carried on. Compare the poet's idea with that in this paragraph from "My Chateaux," in "Prue and I," by G. W. Curtis.

"Titbottom suddenly exclaimed: 'Thank God! I own this landscape.'

"'You,' returned I.

"'Certainly,' said he.

"'Why,' I answered, 'I thought it was part of Bourne's property.'

"Titbottom smiled.

"'Does Bourne own the sun and sky? Does Bourne own that sailing shadow yonder, or those ghosts of hills that glide pallid along the horizon? Bourne owns the dirt and fences; I own the beauty that makes the landscape.'"

l. 46. *For music.*—Does this mean instead of music, or that it really was music?

l. 47. *Orchestra.*—The little tree frogs pipe away seriously in flute-like tones; ordinary, half-grown frogs trill with genuine sweetness; anon the hoarse "tr-ronk," "tr-ronk," of an old patriarch frog breaks in with the bass of a trombone.

l. 48. *Noisy choir.*—Reconcile this with "music" and "orchestra."

l. 50. *Pomp and joy.*—Pomp and circumstances to produce joy.

l. 57. *Fresh baptisms.*—Physical renewal or regeneration.

l. 61. *Prison cells of pride.*—So a country boy might regard shoes in summer, except when worn as a protection on rough ground. Doubtless, too, shoes are often worn rather from pride than need. In some country schools most of the children go barefooted. Frequently some of them are compelled by their parents to wear shoes solely as a mark of superior gentility to the others. What also of the tight shoes of slaves of fashion? Notice that the poet recognizes further on the need of the feet being shod for work.

l. 64. *Mills of toil.*—Nearly all human work is as much a matter of repetition as is the movement of the horse in the treadmill. Illustrate.

l. 65. *Moil.*—Toil, drudgery.

l. 70. *Could'st know.*—Could'st realize how happy thou art before thy happiness disappears.

Notice the extended metaphor in the last lines—the boy exposed to danger from sin as the traveller from quicksands. Remark as well the deep moral earnestness of the poet, as he wishes a pure and happy life for the boy. This last section is in substance more didactic than the rest of the poem, yet it is poetical in spite of Edgar A Poe's dictum that a didactic poem is a contradiction. Compare the conclusion of "The Humble Bee," and of other poems.

A.S.

—From "Lessons in Entrance Literature," edited by F. H. Sykes, M.A., 1892.

DRAWING.

BY A. C. CASSELMAN.

If there are any teachers or pupils who have not been both *observing* and *expressing* by drawing the common objects named in the last articles, let them begin now. Procure the objects of which the pictures are shown, place one of them before you on a book cover, and observe its outline; draw it, and add some lines of expression, as shown in the drawings in the last number. Remember it takes some time to learn to use the pencil so as to make an expressive line, after you have observed what to express by a line.

Let us review the work of the past numbers, and understand clearly, before going on, the alphabet of drawing, In writing we express our ideas by different combinations of *symbols* that represent sounds. In drawing from objects we express their appearance by means of *lines* made by either a pen or pencil.

1. All objects or solids have a *surface*, which is the whole *outside*.

2. Surfaces as to kind may be either *plane* or *curved*.

3. Surfaces may be either *whole*, as in the sphere, or *broken*, as in the cylinder and cube.

4. If the surface is broken by *edges*, as in the cylinder and cube, each part into which it is divided is called a *face*.

5. A *face* is the *whole* surface, as in the sphere, or it is *part* of the surface bounded by an edge or edges.

6. An *edge* is the place where two faces meet.

7. Edges may be :

(*a*) *Straight*, those that do not change in direction throughout their length ;

(*b*) *Curved*, those whose direction constantly changes ;

(*c*) *Horizontal*, those that are level or parallel with the surface of water at rest ;

(*d*) *Vertical*, those that run up and down ;

(*e*) *Oblique*, those that are neither vertical nor horizontal ;

(*f*) *Receding*, those that extend away from the observer.

8. If one part of a plane face is visible, the whole of it is generally visible.

9. The whole or only part of a curved face may be visible.

10. A face or an edge may be *near* to the observer, or may be *far away* from him. The face may be in *shade* or in *light*, or a *shadow* may be cast upon it.

All the above information with regard to objects can be expressed by means of lines. A line, as to kind, may be either *curved* or *straight; horizontal, vertical*, or *oblique*.

When we observe the sphere only about half of the surface is visible. Now, the *limit of vision on the face* is expressed by a line. An *edge* is expressed by a *line*.

In THE JOURNAL of September 1st the sphere and the near and far edges of the book were expressed by three lines, or were shown in *outline* only. Now, it is important to get a true outline before going further. So, in drawing any object, strive to obtain the correct outline. If the first line drawn is manifestly in the wrong place, as it is most likely to be, allow it to remain as a guide to you to get the correct position of the line representing the edge or limit of vision of the curved face. All lines except the true outline may then be erased.

An edge or the limit of a curved face that is *near* you can be seen *more distinctly* than those that are *farther away* from you, and should be shown more distinctly in the drawing by a heavy line.

Heavy lines represent edges or limits of vision on curved faces that are near you, and light lines those that are farther away from you. *Straight* edges are expressed by *straight* lines. *Curved* edges by either *straight* or *curved* lines, according to their appearance.

Horizontal, vertical, or oblique edges are represented as they appear by lines.

If an edge recedes the nearest end to the observer is drawn heavy and gradually lighter as it recedes.

An object drawn in outline does not have the appearance of solidity. To make it appear solid it must be *shaded*.

Place the sphere on a book in such a position that the light falls upon it from the left and above it. Notice that the part the light shines upon appears lighter than the part it does not shine upon. Notice also that the light is prevented from shining upon part of the book by the sphere. The part of the face of the sphere that the light does not shine upon is said to be in *shade*, and the sphere is said to *cast a shadow* on the book.

Shade and *shadow* can be expressed or suggested by means of lines. A *light shade* is expressed by *light parallel lines* and a *dark shade* by light lines placed *nearer* to each other than for a light shade, or by *heavy lines* placed the same distance apart as the lines to express the light shade. Dark shades may be expressed by heavy lines placed nearer to each other than the light lines.

Shades or *shadows* may be observed on both *plane* and *curved* faces and these faces may occupy any *position*.

Shades and shadows appear *lighter* on a surface that is *farther* away than on one that is *nearer* to the observer.

Surfaces in the light appear *darker* as they *recede*.

When shades and shadows on any kind of surface in any position are suggested lines, these lines should also suggest the kind of surface and their position.

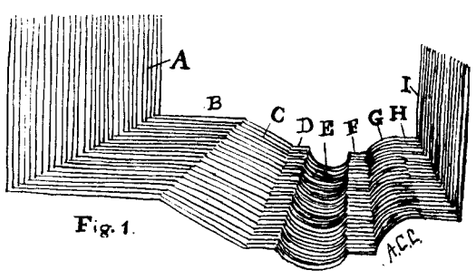

Fig. 1.

In Fig. 1 the surfaces A, B, C, D, F, H, and I are *plane* and are suggested by *straight* lines. E and G are *curved* surfaces and are suggested by *curved* lines. A and I are *vertical* and this position is suggested by *vertical* lines. B, D, F and H are *horizontal* and are suggested by *horizontal* lines. C is *oblique* and is suggested by *oblique* lines.

Study your drawings and those that have appeared in THE JOURNAL and see how each fact of appearance is expressed. If you can put meaning into every line you draw, your drawings will be expressive. Every line should be drawn for a purpose, and should express that purpose fully. Never draw a line without some meaning. If a line has no meaning it should not be in a drawing.

I shall be glad to receive pen-and-ink drawings of common objects, on Bristol board or smooth drawing paper, from any pupils or teachers. Those suitable for the purpose will be reproduced in THE JOURNAL and will be kindly criticized. Let every class studying for the Entrance make an effort to send in some work. All I ask of you is to do your best, and you may be sure of encouragement in your attempts. Every contribution will be acknowledged in the next issue after its receipt. Who will be the first to send us something? If you need any help in teaching Drawing, or if you have any methods of teaching it that have produced good results, let us hear from you. Address all communications to Drawing Master, Normal School, Toronto.

ENTRANCE ARITHMETIC FOR 1896.

SOLUTIONS.

1. 12 bu., 3 pk., 1 gal., 2 qt. = 414 quarts.
Since $\frac{3}{4}$ of a qt. is held by 1 box
$\therefore$ $\frac{1}{4}$ of a qt. is held by $\frac{1}{3}$ "
And $\frac{4}{4}$ of a qt. is held by $\frac{4}{3}$ "
And 414 qts. are held by $\frac{414 \times 4}{3}$ boxes $= 552$

2. (*a*) $\frac{1-\frac{2}{3} \text{ of } \frac{3}{4}}{1-\frac{1}{3} \times \frac{1}{5}} = \frac{1-\frac{1}{2}}{\frac{2}{3} \times \frac{1}{5}} = \frac{\frac{1}{2}}{\frac{2}{15}} = \frac{15}{4}$

$\frac{\frac{2}{3}+\frac{5}{6}}{1\frac{1}{8}} = \frac{8}{6}$

$\frac{15}{4} \times \frac{8}{6} \div \frac{16}{1} = \frac{15}{4} \times \frac{8}{6} \times \frac{1}{16} = \frac{5}{16}$. Ans.

(*b*) $.0476 \times 4.2 = .19992$.
$.19992 \div .014 = 199.92 \div 14 = 14.28$. Ans.

3. Number of days from Jan'y 8, 1894, to Jan'y 25, 1895 = 382 days.
Since the int. on \$1,000 for 365 days @ 6 % = \$60
$\therefore$ " " " " 1 day $= \frac{\$60}{365}$
And " " " " 382 days $\frac{382 \times \$60}{365}$
= \$62.79 +.
\$1,000 prin. + \$62.79 int. = \$1062.79, amount.

4. Since a board 1 ft. long by 1 ft. wide by 1 in. thick = 1 ft. of lumber,
$\therefore$ a sidewalk 2,640 ft. long by 4 ft. wide by 2 in. thick = 21,120 ft. of lumber.
Since 1,000 ft. of lumber cost \$15,
$\therefore$ 1 foot of lumber will cost $\frac{\$15}{1,000}$
And 21,120 ft. of lumber will cost $\frac{21,120 \times \$15}{1,000}$
= \$316.80.

5. Since in $2\frac{1}{3}$ mos. the man earns \$280,
$\therefore$ in 1 " " " $\frac{\$280}{2\frac{1}{3}} = \$120$
And in $3\frac{1}{2}$ " " " $3\frac{1}{2} \times \$120 = \$420$
And in 12 " " " $12 \times \$120 = \$1440$
Since in $4\frac{1}{6}$ mos. he spends \$420
$\therefore$ in 1 " " " $\frac{\$420}{4\frac{1}{6}}$
And in 12 " " " $\frac{12 \times \$420}{4\frac{1}{6}} = \$1209.60$
\$1,440.00 − \$1,209.60 = \$23.40, saved.

6. Since for every $\frac{2}{3}$ bbl. Spies there is 1 bbl. of Wageners,
$\therefore$ for every 2 bbls. Spies there are 5 bbls. of Wageners,
Since out of 7 bbls. 5 bbls. are Wageners.
$\therefore$ out of 1 bbl. $\frac{5}{7}$ bbl. is Wagners,
And out of 126 bbls. $\frac{126 \times 5 \text{ bbls.}}{7}$ or 90 bbls. are Wageners.
126 bbls. − 90 bbls. = 36 bbls. of Spies.
Since 1 bbl. of Spies cost 25c. extra,
$\therefore$ 36 bbls. of Spies cost $36 \times 25\text{c.} = \$9$ extra.
Since 126 bbls. of Wageners would cost \$189
$\therefore$ 1 bbl. of Wageners would cost $\frac{\$189}{126}$
= \$1.50.

And $1.50+25c. extra=$1.75 for 1 bbl. of Spies.

7. Since 4,639 bushels cost $974.19,

$\therefore$ the average cost per bushel $= \frac{\$974.19}{4,639}$

=21c.

Since on 1 bushel he gains 2c.

$\therefore$ on 4,639 bushels he gains $4,630 \times 2c.$ =$92.78.

Since on $974.19 outlay the gain is $92.78

$\therefore$ on 1c. outlay the gain is $\frac{\$92.78}{97.419}$

And on 100c. outlay the gain is $\frac{100 \times \$92.78}{974.19}$

=9+cents

$\therefore$ 9+ per cent.=gain.

8. 9,000,503
800,004
570,000,002
353,000
2,004
58,058
4,050,309
306,040,010

890,303,890=Eight hundred and ninety millions three hundred and three thousand eight hundred and ninety.

COMPOSITION.

From whatever point viewed, there is no more important study in the Public Schools than that of composition. As a language-lesson, pure and simple; as a practical study, of the greatest utility in reference to future life, in any and every kind of occupation; as a most effective drill, in preparing for examinations; above all, as a purely educative exercise, for developing the powers of thought and expression, it has few, if any, equals. And the very best way in which composition can be taught is by having the learners do a large amount of original writing, on subjects with which they are familiar. Perhaps no better method can be found than the frequent writing of letters. The following, kindly sent us by Mr. Armstrong, is a suggestive example. Incidentally the matter of form and address should be carefully looked after.

No. 57 Acme street, Toronto.

DEAR UNCLE,—Your letter of the 15th inst. duly received. I was glad to hear that you and aunt were so well. I thank you very much for the gold pen you sent me. I am writing this letter with it. I shall always use it when writing to you.

Our school was closed during July and August. I remained at home until the 1st of August. On that day I started for Owen Sound on my wheel. There were six in our party. We took two days to make the journey. The weather was very warm, and we were all glad when we reached the town. After a few days' rest we went to Goderich. While there we visited the salt wells, and saw the whole process of preparing salt for market. Our ride home was very pleasant, for the weather was cool. Our friends scarcely knew us, we had become so tanned by the sun and wind.

At the beginning of this term I was promoted to the Senior Fourth or Entrance class. There are forty scholars in our room. It takes me an hour and a half every night to prepare my home lessons. I like literature better than any other subject. We are studying "Pictures of Memory" now. Our teacher showed us a picture of Alice Cary, the lady who wrote this poem. I liked her face. It was sweet and thoughtful.

I went to see our Exhibition on Labor Day. The greatest event of the day was the visit of Li Hung Chang. Let me tell you about him. He is China's greatest statesman, and is making a trip around the world. Our Government sent a special train to carry him and his suite through Canada, and paid all their travelling expenses. Sir Henry Joly had the party in charge. At 3 o'clock his train arrived. He was received by the mayor and other distinguished citizens. Four stalwart policemen carried him around the grounds in his sedan chair. He wore his famous yellow jacket and peacock feathers. Although seventy-five years old, he looks fresh and strong. He took much interest in many of the exhibits, and had his secretary take notes of some of them. Before leaving, he said he was well pleased with his reception. At eight o'clock the same evening he resumed his journey to the Pacific coast.

Hoping to hear from you soon, I shall now say good-by.

Your loving nephew,

RUSSELL HOWARD.

Public School Leaving.

THE BARD: THOMAS GRAY.

BY W.

(Concluded.)

Stanza 2 of Part II. depicted the death of Edward III., who, after all the victories and glories of his memorable reign, found himself deserted and almost friendless in his last hours. "Deserted by his mistress, who is said to have torn the rings from his dying hand: and by his servants, the wretched old man died, tended only by a single priest."—(*Bright, p. 241.*)

The rising morn.—The reference is probably to the fact that a strong party had arisen in favor of the Black Prince, and most of the Commons, as well as of the clergy, politicians, etc., had attached themselves to this party.

Fair laughs the morn . . . Evening prey.—These six lines are somewhat obscure, but are, perhaps, best understood as an allegorical representation of the changed fortunes of Edward III., the bright beginning of whose reign was finally merged in so sad an ending.

II. 3. *Reft of a crown*, etc.—The reference is not quite clear, though it would seem to be to Richard II.

Long years of havoc.—The reference is now to the Wars of the Roses.

Kindred.—Explain the connection between the Houses of York and Lancaster.

Ye towers of Julius.—Early writers have alleged that the Tower of London was first erected by Julius Cæsar as a Roman fortress. The tradition lacks proof.

London's lasting shame.—Many dark deeds, such as the murder of Edward II., of Edward V., and his brother, etc., were done in the Tower of London.

His consort's faith.—The wife of Henry VI. was Margaret of Anjou. She was as strong-minded as her husband was weak. In what sense *faith* is used does not seem quite clear; the reference, probably, is to her great fortitude during long years of trial and danger, and her resolute, unfaltering adhesion to his cause and fortunes.

His father's name.—Henry V., the hero of Agincourt and conqueror of France, was an able and large-minded monarch, as well as a brave warrior.

The rose of snow.—The white rose was the emblem of the House of York; "*her blushing foe*," the red rose, was that of the House of Lancaster.

The meek usurper.—Henry VI., who seems to be meant, was gentle in disposition, though pitiably weak in intellect. He is supposed to have been murdered in the Tower, though Gray does not seem to think so.

Her blushing foe.—See note on *the rose of snow.*

The bristled boar in infant-gore.—It is generally believed that Edward V., a lad of 13, and his brother, who were imprisoned in the Tower by their uncle, the Duke of Gloucester, were also put to death by him, or by his order.

III. 1. *The thread is spun.—I.e.*, the dread prophecy is finished.

Stay, oh, stay!—The living bard implores his ghostly brethren, who, having completed their prophecy, are departing, to stay.

The tragedy of the Edwards is now complete, and the bard turns to a more glorious phase of English history.

Their glittering skirts.—Whose? Those of the personages whose chief characters are described in the next stanza.

Our long-lost Arthur.—The interest of the legends clustering about the memories of King Arthur and his "Knights of the Round Table" has been so effectually revived by Tennyson in our days that most will be more or less familiar with them. The historical Arthur was king of the Silures, a tribe of the ancient Britons, in the early part of the sixth century. "He rallied round him the remains of the British tribes, now driven into the west of England, and bravely defended the liberty and faith of his people against the encroaching and conquering Anglo-Saxons under Cerdic." He was at last mortally wounded at a battle fought on the Camlan, in Cornwall. The last brave struggle of the Celtic tribes against their conquerors, in which he was the chief hero, became the groundwork of a multitude of heroic legends, which were early celebrated by the Welsh bards, and have been reproduced by later poets from the days of Geoffrey of Monmouth to those of Tennyson.

The genuine kings.—Genuine is hardly a poetic word. It smacks more of the mints and manufactories than of the haunts of the Muses. It, therefore, strikes the ear as somewhat out of place in a passage so full of poetic fire.

III. 2. *Sublime their starry fronts*, etc.—The illustrious monarchs of the Tudor line appear in state, surrounded by their nobles and statesmen.

In the midst a form divine.—The reference is, of course, to Queen Elizabeth.

What strings symphonious.—The Elizabethan age was the golden age of English literature and poetry.

III. 3. *Fierce war and faithful love.*—The first six lines of this stanza may refer generally to the numerous dramatists of the Elizabethan period, but Shakespeare is no doubt the central figure in the mind of the bard.

Gales from blooming Eden bear.—Milton's voice is clearly the voice which is "as of the cherub-choir."

Lessen on my ear.—Grow fainter and fainter as they fade away into the far-off future. A fine conception.

Fond, impious man.—The bard addresses himself again directly to Edward. *Fond* in its old sense of *foolish.*

Yon sanguine cloud.—The putting to death of the Welsh bards.

The orb of day.—Note the beautiful and striking metaphor. As well might Edward think to quench forever the light of the sun with a cloud formed by

his breath as to destroy permanently the spirit of poetry and patriotism by putting to death the Welsh bards.

Be thine despair.—The bard with joy contrasts the fate of Edward, as seen in his vision, with his own, implying that *triumph* and *death* are happier than *despair and sceptred care.* His triumph came in the prophetic vision of the doom to be visited upon Edward's line, and in the resurrection of the spirits of the murdered bards in the great poets of the coming age.

Deep in the roaring tide.—This tragic ending of the poem is quite in keeping with the poet's plan. The bard who stood on a rock overhanging "old Conway's foaming flood," and uttered these weird denunciations and prophecies in the ears of the startled Edward and his suite, though he had temporarily escaped the fate of his brethren, could not hope to do so longer, now that he had revealed his hiding place and uttered these terrible words. He, therefore, but anticipates his fate by casting himself from the top of the rock into the river.

HALF-YEARLY PROMOTION EXAMINATIONS—CITY PUBLIC SCHOOLS, PETERBOROUGH.

June, 1896.

MENTAL ARITHMETIC—JUNIOR 4TH CLASSES.

Time, 45 minutes.

1. If a barrel of flour will last four persons five weeks, how many barrels will it take to last three persons two weeks?

2. How many barrels holding 2 bu., 1 pk., 3 qt., will a farmer require to pack 75 bu. of apples for market?

3. What is the least number which divided by 3, 5, 7, 9, or 15, leaves 1 for a remainder in each case?

4. A lady wishes to hang a picture 2 ft. 4 in. high, and 1 ft. 10 in. wide, exactly in the middle of a wall 14 ft. long and 10 ft. high. How far, in feet and inches, will the bottom of the picture be from the floor?

How far will the left-hand edge of the picture be from the left-hand edge of the wall?

5. Find the value of $2\frac{1}{3} \times 3/14 + 5\ 5/11 \div 15/77 - 4\ 2/7$ of 6/15.

6. A boy worked five days. On the first day he earned $\$\frac{3}{8}$; on the second, $\$\frac{1}{2}$; on the third, $\$\frac{5}{8}$; on the fourth, $\$\frac{3}{8}$; and on the fifth, $\$\frac{3}{4}$. What did he earn daily, on the average?

7. A lady purchased on the market the following goods, giving in payment a ten-dollar bill: 1 quarter lamb (16 lb.) @ $6\frac{1}{4}$ cts.; 6 chickens @ $33\frac{1}{3}$ cts. a pair; 1 gal. 3 qt. maple syrup @ 80 cts. a gallon; and 3 lb. 8 oz. butter @ 20 cts. a pound. How much "change" should she receive?

8. How long will it take a man on a bicycle, riding forty miles an hour, to cross a bridge forty rods long? (Give answer in fraction of an hour.)

Values—$12\frac{1}{2}$ marks each.

TEMPERANCE AND PHYSIOLOGY—SENIOR 3RD AND JUNIOR 4th.

Time, Junior 4th, 2 hours; Senior 3rd, $1\frac{1}{2}$ hours.

(Third class pupils will answer the first five; fourth class pupils, all nine questions.)

1. How does a muscle differ from a tendon? A hinge joint from a ball and socket joint? Mention parts of the body in which each of these may be found.

2. Make a drawing of the alimentary canal, showing (1) the mouth, œsophagus, stomach, and duodenum; (2) the glands whose secretions aid digestion.

3. Explain what happens to the food from the time it enters the mouth till it leaves the stomach.

4. Point out the bad effects of the following: (1) Eating between meals; (2) working immediately after eating; (3) eating just before retiring for the night.

5. Tell what are the effects of using alcohol and tobacco upon the stomach and the liver.

6. Make a drawing of the "Thoracic Duct," showing how the lower end is connected with the intestine, and the upper with the "Vena Cava." Indicate by an arrow the course of the digested food from the intestine to the blood.

7. Make a drawing to show how the blood is purified.

8. Tell how the air we breathe in differs from the air we breathe out.

9. What effect has alcohol on the heart and blood vessels?

Values—Senior 3rd, fifteen marks for each question; Junior 4th, nine marks for each question.

GRAMMAR—SENIOR 3RD.

100 marks + 5 for neatness. Time, $2\frac{1}{2}$ hours.

(*a*) "He *who* from zone to zone
Guides through the boundless sky *thy certain In* the long way that I must go alone, [*flight,*
Will lead my steps *aright.*"

(*b*) "Of the five senses, flowers address *themselves* most feelingly to *two.* In delighting the sense of smell *they* stand *alone. Does* true fragrance ever *come* from anything but a *plant?* Are not flowers especially the generous dispensers of grateful odors? And to the eye *what wealth* of beauty do they unfold! We need think of only the lily, the pink, and the *rose.* Was anything ever arrayed like one of these? When we look upon them they fill the heart with joy."

1. Fully analyze (*a*).

2. Rewrite (*b*), arranging all the sentences in direct order, as for analysis.

3. In (*b*) analyze the complex sentences.

4. In (*b*) draw one line under the noun phrases, two under the adverbial phrases, and three under the adjective phrases.

5 Parse the words printed in italics in both (*a*) and (*b*).

6. Make a list of the pronouns in both (*a*) and (*b*), and decline them.

7. Make a list of the verbs in (*a*) and (*b*), and give their "principal parts."

8. Make lists of the adverbs and adjectives in (*a*) and (*b*), and compare those that are comparable.

9. Make a list of the nouns in (*a*) and (*b*); opposite it, in another list, write the other number-forms of these nouns; then change the nouns in the latter list so as to make them indicate possession.

10. Rewrite the sentences in (*b*) that contain transitive verbs, changing the voice of these verbs.

11. Correct the following sentences, giving reasons:

(*a*) She done wrong in stopping so long; she ought to have went straight to school, and then her teacher would not have spoke so sharp to her.

(*b*) I will go to-day and see my brother, he who you seen with mother and I yesterday.

Values—12, 8, 8, 12, 27, 8, 8, 7, 8, 8, 10. Deduct half a mark for each word misspelled.

CURRENT EVENTS.

Fifty-one Cuban insurgent prisoners were ordered to be executed by General Weyler.

Jacob Gaudaur, of Canada, defeated James Stanbury, of Australia, in a single-scull race for the world's championship.

The latest advices from Madagascar describe the island within the French protectorate as in a horrible condition of anarchy.

The visit of the Czar to England, and his conference with the Queen, which took place last week, are expected to have an influence on the Eastern question.

Our Government has appointed Premier Peters, of Prince Edward Island, and Mr. Bieque, Q.C., of Montreal, to be Dominion counsel in connection with the Behring Sea Claims Commission, which meets in Victoria, B.C., shortly.

By the efforts of Miss Sarah Mickle, of Toronto, a well-executed portrait of Sir Isaac Brock has been brought to light, and has been placed in the hands of Mr. Gerald S. Hayward, the portrait painter, for reproduction in engraving.

There have been, up to the date of this writing, but two divisions of the House of Commons this session. In both the Laurier government has been sustained by good majorities. In the last division, on Tuesday, the 22nd, its majority was thirty-seven.

There appears to be evidence that a dynamite attack was intended upon Balmoral Castle, while the Czar was visiting the Queen, by Irish dynamiters, assisted, some say, by Russian Nihilists. The prompt arrest of Tynan, and several other conspirators, has restored confidence in England.

On Saturday, 19th inst., the Anglo-Egyptian forces occupied Karma, on the Nile, almost without opposition. The troops hurried forward to Dongola, which is only thirty miles distant, and occupied it without a struggle, as it was found to be undefended. This was to be the end of the expedition, but many are now urging that it should proceed to recapture Khartoum and subdue the whole Soudan. It would be a good thing for Egypt and for civilization.

It is expected that Parliament will be adjourned or prorogued this week. If it is merely adjourned the meeting next spring will be a continuance of the present session. If it is prorogued it ends the session, and all unfinished business is quashed. In that case the next meeting will be another session. Most members of the Commons will, no doubt, favor prorogation, as this short meeting will then count as a full session, and the members will receive their full sessional indemnity.

Just as we are revising the proof of this page comes the news that the telegraph operators and train despatchers on the Canadian Pacific have struck. They want higher wages, and object to certain kinds of work they are expected to do. The following explanation of the duties of these men shows how their strikes will embarrass the road, and put a stop to traffic, unless their places can be filled at once: The system is divided into a number of districts, each district having a central office, wherein train despatchers sit at telegraph instruments and wire the hundreds of operators at the numerous stations on the road instructions as to the movements of trains. When, therefore, a freight arrives at a station, not manned by an operator, it will have to be side-tracked there until someone takes his place and obtains a message from headquarters.

The St. James' Gazette proposes a triple alliance of the United States, Great Britain, and Italy, in regard to Turkish massacres. There is little doubt that if the British Government could be assured of the support of the United States she would at once proceed to put an end to the Sultan's career of assassination, and to save the Armenians from further butchery, even though all Europe should oppose her. Mr. Gladstone, the grand old man, made a powerful speech, the other day, on the Armenian question. He denounced the Turkish Sultan as a "great assassin," and eloquently depicted the woes of the wretched Armenians. While even he does not go so far as to say that England should attack Turkey single-handed, with the great European Powers against her, and ready, as some of them have declared, to bring on a terrible European war, he would have the English Ambassador withdrawn from Constantinople, and all diplomatic relations between Great Britain and Turkey discontinued.

Intermediate P.S. Department.

Designed specially for teachers of Second and Third Class. Edited by M. A. WATT.

GEOGRAPHY—ONTARIO.*

I. Position in world. (Sun at noon.)

Relative position of Dominion, then of Province of Ontario in Dominion (somewhat central, having sea-coast on James Bay).

II. Climate. From experience, find that from winter to summer is a continental climate (extremes of temperature) rather than insular climate. Humidity, to be learned from experience of rain and snowfall. One fact to be given that along Lakes Erie and Ontario from Long Point to Whitby the rainfall is greater than inland (accounted for by lakes to south).

III. Formation of country. An elementary idea of geography—oldest formation in world (certainly in North America). Laurentian system first to rise above the water; certain economic products not to be found, as coal, which is not, nor can be (?) land being formed previous to coal period.

The direction of Laurentian Hills: from Ottawa to Kingston, to Adirondacks; from Kingston to Georgian Bay, thence to Lake Athabasca. (Small lakes, countless, from east to west in plateau itself formed largely in ice-period.) South of range are two plains, one east, one west, bounded by Niagara Escarpment, round to Hamilton, to Blue Mountains, to Bruce Peninsula. Most fertile part, garden of Ontario these plains; believed to be shore of ocean in olden time; clear idea is given by view from Lewiston.

III. Economic products.

1. Surface.—Trees, for lumber. No agriculture near North Bay, at Maganetawan, and only in portions south of Nipissing; lumber, pine chiefly. In southwest characterized chiefly by walnut and chestnut.

2. Under surface.—Unknown riches and known riches of nickel, platinum (at Sudbury); copper (west, Superior and Huron, not as a metal, but as a mineral; a mineral is stone with ore); large deposits of silver and some lead. In the east are found iron; mica (nearly as clear as North Carolina mica) north of Kingston; phosphates (as manure) near Ottawa; (the iron manufactures at Kingston lapsed for want of coal, finding charcoal too expensive); salt; petroleum; gypsum (near Grand River); plaster of Paris and natural gas.

IV. Physical features of surface.—Indicated by rivers, height of land, and slopes.

1. Hudson Bay slopes from Laurentian range.

2. A slope toward Lake Winnipeg by Rainy River and English River (flows to Lonely Lake, to both Hudson Bay and Lake Winnipeg).

3. Slope toward Lake Huron. (There are no rivers in Ontario; the Thames, 120 miles long, is navigable only to Chatham, 18 miles; but there are a great many small streams.)

4. Peninsular slope (no rivers except west or southwest, Grand, Saugeen, rising on heights).

5. Ontario slope (the Trent the largest river).

6. Slope towards the Ottawa.

V. Names of counties, cities, trade, canals, etc.

EXAMINATION PAPER—ONTARIO.

1. Draw a map of Ontario, and on it dot a line to show the highest land. Mark the Thames Saugeen, Grand, and Trent, and the boundary waters.

2. Tell one fact you have learned about the rainfall in Ontario. How could you measure the rainfall in your school yard? (By means of tubs or barrels the test could be made roughly.)

3. Where has Ontario her sea-coast?

4. What bad places for sailing are there in the boundary waters of Ontario? How are these places overcome by steamers?

5. What provinces lie east and west of Ontario?

6. Tell what lakes and rivers a boat would pass through in going from Lake Superior to the River St. Lawrence. What cities would it pass?

7. Give an account of the climate of Ontario, its humidity and healthfulness.

8. What is known of the underground treasures of Ontario?

*Notes taken down at a teachers' convention, which have been helpful since in teaching.

THIRD-CLASS—ARITHMETIC.

1. The difference of two numbers is 15, and the less number is 12; what is the greater?

2. The product of two numbers is 120, and one of the numbers is 24; what is the other?

3. To how many men could you pay $12 each, after paying 30 men $9 each out of $810?

4. I bought some books for $3.78, and sold them for 20 cents apiece, losing 18 cents; how many books did I buy?

5. A man bought a house for $3,540. He paid $125.50 for repairs and then sold it, so as to gain $250. For what did he sell it?

6. An agent sold a piano for $275, which was $47 more than it cost. What did it cost?

7. How many 25-cent pieces would pay for 15 yards at $1.10 a yard?

8. I bought 210 acres of land for $25,200. I sold it at $115 per acre, did I lose or gain, and how much?

9. Find the greatest number that will divide 1197 and 1029; and the least number that will contain 25, 18, 30, without a remainder.

10. How many tenths in ½ an apple? Eighths in ¾ of a yard? Sixteenths in ¼ of 12 inches?

11. What part of my lot may I sell to have four-fifths of it left? Three-sevenths of it? Five-elevenths of it? Five-twelfths of it? One-eighth of it?

12. If ½ of a fish be worth $1.20, what will ¼ of it be worth?

13. Which is the least part of a dollar, one-fifth, one-quarter, or one-third? Two-thirds, three-quarters, or four-fifths of a loaf? Eleven-twelfths, nine-tenths, or seven-eighths of a foot?

14. What would you have left out of two five-dollar bills, after paying for the following goods: 10½ lbs. of sugar at 9 cents a lb.; 4¼ lbs. of tea at 40 cents a lb.; 1 dozen cans of sardines at 11 cents each; 12 dozen eggs at 17 cents a dozen; 1½ dozen cans tomatoes at 9 cents each?

SECOND-CLASS—ARITHMETIC.

1. If 10 oranges are sold for 20 cents, what will a dozen cost? (24 cents.)

2. If 15 eggs cost 20 cents, what will 18 eggs cost? (24 cents.)

3. If 7 rabbits cost 84 cents, what will 9 rabbits cost? ($1.08.)

4. If a boy can run 30 yards in a minute, how far can he run in 120 seconds? (60 yards.)

5. A boy named John has 16 marbles, which is ten less than his brother Tom has, and Tom has twice as many as George, his younger brother.

6. How many has George? (13 marbles.)

7. How much money will be needed to pay for the balance—when a woman sells 16 dozen and 6 eggs at 16 cents a dozen, and 15 lbs. of butter at 18 cents a lb., to a grocer who gives her 2 lbs. of tea at 35 cents, 20 lbs. of sugar at 10 lbs. for $1, and 2 lbs. of raisins at 9 cents per lb.? Who gets it? (Woman gets $5.34 − 2.88 = $2 46.)

THE SIMPLE RULES.

(From a Teacher's Notebook.)

Practice to secure rapidity and accuracy in working the four simple rules in arithmetic should take a very liberal share of the time of the junior classes. We are constantly reminded of the lack of this practice by the work in the senior classes. We are more and more convinced that the few problems given the junior classes should involve small numbers and much more time should be given to straight work.

Each of the following test questions for speed and accuracy in addition is supposed to be done by the pupils of the Toronto Public schools in sixty seconds. We give the answers for the convenience of the teacher. Five billion questions can be made from these by changing the order of the numbers, while the answer will remain the same. This will be enough for a whole year's practice. Seven minutes each morning would be sufficient time for three questions:

(1)	(2)	(3)
73549	93586	68359
68759	49283	40947
45836	27469	87593
82965	87693	94678
56784	54876	73854
68935	67239	52389
42874	84685	48675
54896	35468	56789
56283	56453	93876
39657	78657	37254
86998	85694	85692
35482	29354	45387
713018	750457	791493
(4)	(5)	(6)
45928	68354	83695
65385	95766	48256
74768	74678	62854
36295	93584	64539
86769	67522	28758
35348	86937	94352
76452	64285	65824
38568	46825	45687
67829	57869	93825
84753	49287	69495
38549	69846	42678
93756	28738	35678
744400	803691	735641
(7)	(8)	(9)
76839	25836	98765
48392	83695	68375
78675	72438	48296
93548	37596	95387
52867	82469	84675
46875	46857	83964
64789	93756	96857
93827	59428	24835
48596	76829	72968
56738	34586	45693
35486	49824	74528
57693	63875	68492
754325	727189	862835
(10)	(11)	(12)
84756	36925	42637
72839	37874	94685
54864	96476	38275
67539	65838	67968
93574	72547	53847
49286	69686	57266
78698	78795	89647
56376	87654	45683
48764	98765	74659
36495	39654	53862
59678	75496	57648
88647	35616	83998
791516	795326	760175

EAST VICTORIA PROMOTION EXAMINATIONS.

June 22nd and 23rd, 1896.

2ND CLASS—GEOGRAPHY.

1. On what continent do we live? What ocean is to the east? What ocean is to the west?
2. Name two plants raised in Ontario for their seed, two for their roots, two for their leaves, and two for their fruit.
3. Name the continents of the Eastern Hemisphere, and tell the direction of each from the Mediterranean Sea.
4. Name the oceans, and tell the continents watered by each.
5. Draw a map of the Townships of Emily, Ops, Fenelon, and Verulam, and mark the rivers and lakes.
6. What and where are Amazon, Horn, Iceland, Italy, Florida, Vancouver, Shetland, Nile, Panama, Australia, Black, Superior?
7. Define coast, island, mountain, river, strait, cape, creek, desert, valley, tributary.

Values—3, 4, 6, 5, 10, 12, 10.

COMPOSITION.

1. Correct the following:
   (*a*) Jane and mary is there.
   (*b*) Can me and john go out.
   (*c*) I seen him do it.
   (*d*) It aint no good.
   (*e*) He done it very quick.
   (*f*) I knowed I had saw him before.
   (*g*) How many is there in the box.
   (*h*) You had better lay down and rest.
   (*i*) Me and john picked them pears.
   (*j*) There is five deer in the park.
2. Write a short description of your schoolhouse.
3. Write a letter to a friend telling how you intend to spend your holidays.
4. Combine these statements into a simple sentence: The boy came. The boy was pretty. The boy was little. He was blue-eyed. He had rosy cheeks. He was a young boy. He came to his mother. He had a rabbit. The rabbit was white. The boy carried the rabbit in his pinafore.
5. Write a few lines about the ostrich, telling of its appearance, where it lives, how it is caught, and its uses.
6. Write sentences containing the following words, one word in each sentence: peace, piece, bear, bare, through, threw, vale, veil, course, coarse.
7. Write a composition on the sheep, describing its appearance, its habits, its uses, and tell any story you know about a sheep.

Values—20, 5, 10, 5, 5, 20, 10.

3RD CLASS—GEOGRAPHY.

1. A vessel sails from Port Arthur to Montreal and returns. Give (*a*) the waters through which she passes on her down trip, (*b*) her probable cargo each way, (*c*) at least 5 important cities or towns passed.
2. What, where, and for what noted are Ganges, Amoor, Ohio, Andes, Pyrenees, Sicily, Labrador, Brandon, Fraser, Corea?
3. Define oblate spheroid, plateau, longitude, promontory, crater, equator, archipelago, channel, rapid, creek.
4. Draw a map showing the position of the largest four of the West India Islands.
5. Name and locate the principal islands of the Mediterranean Sea.
6. Name the chief rivers of North America flowing into the Atlantic Ocean.

HISTORY.

7. Name the discoverer of Canada. From what country did he sail? In what year?
8. What Indian tribes occupied Canada at the times of its discovery? In what part was each tribe located? With what European nation did each tribe make alliance?
9. When was Quebec taken from the French? Why was it taken? How was it taken? Name two noted persons who were killed at the time. What was the result of the taking of Quebec?
10. What caused the rebellion of 1837? Who were the leaders? How did the rebellion end?
11. Write about the U.E. Loyalists; who they were, where they came from, when, why, what parts of Canada they settled, how they were rewarded.
12. Give the name of the person who is at present Governor-General of Canada. Premier of Canada. Lieutenant-Governor of Ontario. Premier of Ontario. Warden of the county. Reeve of the municipality in which you live.

Values—10, 10, 10, 10, 5, 5, 3, 3, 5, 3, 5, 6.

COMPOSITION.

1. Combine the following statements into a complex sentence: Sugar is made chiefly from the juice of the sugar-cane. The sugar-cane grows in the East Indies. It also grows in Brazil. Sugar is largely used as an article of food.
2. Substitute a word for each of the italicized clauses:
   (*a*) She returned to the home *where she was born.*
   (*b*) If you do not want it, just say *that you do not want it.*
   (*c*) He seemed to expect *that he would be punished.*
   (*d*) Here is a report *which is issued every year.*
3. Answer the following advertisement: Wanted, a young person, male or female, to serve in the Post Office. Apply to the Postmaster, Lindsay.
4. Change these sentences so as to make them refer to past time: The bee flies from flower to flower. The robin lays four or five eggs before she sets. This horse seldom lies down to rest. Mice get into the pantry and eat the cheese. Tom saws and splits the wood and piles it afterwards.
5. Rewrite the following sentences, putting one word instead of the words in italics:
   (*a*) He accused me of *being ungrateful.*
   (*b*) They were *in the same class* at school.
   (*c*) The *people listening to him* began to laugh.
   (*d*) The *persons looking on* cheered him.
   (*e*) I shall vote *in opposition to* it.
   (*f*) It is hard to *pull* them *up by the roots.*
   (*g*) They *went along with us* to the station.
6. Change the following sentences so that the words in italics shall mean more than one:
   (*a*) The *story* is interesting.
   (*b*) *Turkey* is better roasted than boiled.
   (*c*) That *leaf* has been torn.
   (*d*) His *ox* is lame.
   (*e*) This *sheep* is old.
   (*f*) The *valley* is flooded.

Values, 7, 12, 20, 15, 28, 18.

Mathematics.

Communications intended for this department should be written on one side only, and with great distinctness; they should give all questions in full, and refer definitely to the books or other sources of the problems, and they should be addressed to the Editor,

C. CLARKSON, B.A.,
Seaforth, Ont.

CORRESPONDENCE.

H.B., Glascott P.O., is not very precise in giving references. He mentions the Public School Leaving Arithmetic. Assuming that he refers to the Public School Arith., Q. 106, p. 198, has been solved twice in THE JOURNAL. See May number, p. 29, 1896, and there is no Q. 34 on p. 192. Please write again.

W. VANDUSEN, Wheatland, Man., kindly sent solutions of Nos. 59, 60, 61, 69.

R. H. DAVIS, Sunderland, took the trouble to send solutions to Nos. 77, 78, 90, 92, 99, and 100, which appeared in this column July 1st.

M. A. BRADY, North Augusta, sent solutions of Nos. 60, 91, and 92. Thanks!

H. L. BUCHNER, Crowland, sent five problems taken from the P. S. Arith. Send for private answer; or look out for the forthcoming key. Nearly every difficult question in the book has already been solved in THE JOURNAL. We can hardly begin again. Apply to the nearest competent teacher. Many thanks for your kind words anent THE JOURNAL.

SUBSCRIBER, Hamilton, sends references to only six problems. No reply. "Art is long and time is fleeting."

JOHN IRELAND, Fergus, sent a communication relating to triangles with rational sides. It is of no practical importance to our readers.

W. N. CUTHBERT, Toronto, has again sent solutions of the P. S. Leaving Arithmetic paper, and also an essay on square and cube root. We are glad to see his caligraphy.

REMARK.—We hope that the "Key," or "Companion," to the P. S. Arithmetic will be issued shortly by the publishers of the text-book. In the meantime we are sorry to say that many of our correspondents must possess their souls in patience, seeing that our column is overcrowded with questions from this book and the High School Arithmetic. After disposing of the large batch already waiting for solution, we shall be in a position to help our friends to better advantage. Let no one be impatient, for no other teachers' paper has done as much to help in this way.

PRIMARY ARITHMETIC, 1894.

(By request.)

1. Find, to the fourth decimal place,
   (*a*) The square root of .2.
   (*b*) The quotient of 1 by $(3.14159)^2$.
2. (*a*) Subtract $847\frac{11}{24}$ from $1003\frac{5}{12}$, explaining fully each step.
   (*b*) A number of two digits is multiplied by 3, and the product placed to the left of the original number; show that the number so formed is always exactly divisible by 7.
3. $\$1234\frac{50}{100}$. Toronto, Jan. 15th, 1894.
   Ninety days after date, I promise to pay A. Bee, or Order, the sum of One Thousand Two Hundred and Thirty-four $\frac{50}{100}$ Dollars, at the Bank of Commerce here. Value received.
   C. DEE.

   This note was discounted on Feb. 10th, 1894, at 6 per cent. per annum. Find the proceeds.
4. What rate of interest is made by a bank which discounts a 90-day note at 6 per cent. per annum?
5. If a 5 per cent. stock sells at 105, how much must be invested in it to yield a yearly income of $794, after paying an income tax of 15 mills on the dollar, $400 of income being exempted from taxation?
6. A. lent a sum of money for two years, at 10 per cent. per annum, interest compounded yearly; B. lent an equal sum for the same time, at 10 per cent. per annum, interest compounded half-yearly. B. gained $220.25 more than A. Find the sum each lent.
7. A merchant reduces the marked price of an article by a certain per cent. He gives the same per cent. off this reduced price for cash. The price is now $\frac{25}{36}$ of the original marked price. Find the rate per cent.
8. How many cords are there in a cylindrical log 20 feet long and 3 ft. 6 in. in diameter?
9. Find the diameter of a circle whose area is equal to the sum of the areas of two circles whose diameters are 12 inches and 16 inches respectively.
10. The diagonals of a rhombus are 8 inches and 10 inches respectively. Find the area.

SOLUTIONS.

1. (*a*) .20000000 | .4472 = square root of .2.

```
   16
  84|400
    |336
 887|6400
    |6209
    ----
    1910
    1774
```

N.B.—The last figure is obtained by ordinary division. In such cases, find one figure more than half the required root, and find the remaining figures by ordinary division, using the last trial divisor.

(b) .00003̇14159
951413
942477
31416
12566
314
157
28
9.86958

986* | 100000.0 | .1013 Ans.
1304 2
317 3

N. B.—$3.14159 \times 3.14159 = .00003̇14159 \times 314159$. To get the result correct to 4 places we work it out to 5 places, and, therefore, place the dot over the 5th figure. This dot shows where to begin to write the reversed multiplier, and also shows how many places to point off in the product.

2. (b) Let N be the number of two digits. Proceeding as in the question, we have $300\,N + N = 301\,N$, and 301 is divisible by 7.

3. Time 90 days, has run 26 days, $\therefore$ 64 to run, to which add 3 days' grace for bank discount = 67 days' interest.

Proceeds $= \$1234.50 - (1234.50 \times \frac{6}{100} \times \frac{67}{360})$
$= \$1234.50 \times \frac{5933}{6000} = \$200575 \times 5933 = \$1220.71$.

N.B.—The banks reckon 360 days to the year, *i.e.*, 12 months of 30 days each, for all odd days less than a year.

4. Bank gets \$6 for the use of \$94
$\frac{6}{94}$ " " " \$1, *i.e.*, $\frac{600}{94}\,\%$
$= 6.38\frac{14}{47}\,\%$.

5. \$794 − \$400 = \$394 left after paying a tax of $1\frac{1}{2}\,\%$. We can see by inspection that the gross amount was \$400, for $1\frac{1}{2} \times 4 = 6$; $400 - 6 = 394$. Total income must, therefore, be $400 + 400 = 800$.

Now, 105 invested gives 5
2100 " " 100
16800 " " 800. Ans. \$16,800.

6. The principal is the same. Assuming 10 % per annum = 5 % half-yearly, we have

$P(1.05^4 - 1.1^2) = \$220.25$
i.e., $P(1.05^2 + 1.1)(1.05^2 - 1.1) =$
or, $P(1.1025 + 1.1)(1.1025 - 1.1) =$
or, $P.2.2025 \times .0025 = 220.25$.
$P \times .0025 = 100$.
$P = \$40{,}000$.

N.B.—The assumption made above, and evidently presupposed by the examiners, is not sufficiently accurate for so large a sum. Ten per cent. per annum, payable half-yearly = 10.25 per cent. payable yearly, and in the case of \$40,000 this means 400 times 25 cents, or \$100 a year difference in the yearly interest.

7. Suppose \$1 to be the marked price; $\frac{1}{x}$ to be the price after the first reduction; then $\frac{1}{x^2}$ must be the cash price.

$\therefore \frac{1}{x^2} = \frac{25}{36}$; *i.e.*, $\frac{1}{x} = \frac{5}{6}$. The prices, therefore, are \$1, \$$\frac{5}{6}$, and \$$\frac{25}{36}$. Reduction $= \frac{1}{6} = 16\frac{2}{3}\,\%$.

8. Volume $= \pi r^2 \times$ length $= \frac{22}{7} \times \frac{49}{16} \times 20 = \frac{11}{2} \times 35$ cubic feet.

No. cords $= \frac{11}{2} \times 35 \div 128 = 7.503$ cords.

9. $\pi r_1^2 + \pi r_2^2 = \pi r_3^2$; $r_1^2 + r_2^2 = r_3^2$
i.e., $6^2 + 8^2 = r_3^2$; $r_3 = 10$, diameter = 20 inches.

10. The diagonals of a rhombus bisect at right angles,

$\therefore$ area $= \frac{1}{2} \times 8 \times 10 = 40$ sq. in.

PUBLIC SCHOOL LEAVING, 1896.

ARITHMETIC AND MENSURATION.

1. Find the *product* of the *sum* and *difference of*

$$\frac{.5 - .16}{.25 + 1.305} \text{ and } \frac{\frac{1}{2} - \frac{1}{5} \times \frac{3}{5}}{3\frac{1}{5} - 1\frac{9}{10}}$$

2. (a) Find the square root of 1.1 correct to three places of decimals.

(b) Find the cube root of 1,953,125.

3. Find the alteration in income occasioned by shifting \$5000 stock from the 3 per cents at $86\frac{3}{8}$ to the 4 per cents at $114\frac{7}{8}$; the brokerage being $\frac{1}{8}\,\%$ on each transaction.

4. A cheese factory shipped 30,000 lbs. of cheese to Liverpool, which a commission merchant sold for 46s. 8d. per cwt. (cwt. = 112). Find how many cents per lb. were realized on the cheese, the commission being 1 % and freight, insurance, etc., amounting to \$86,25. (£1 = \$4.86$\frac{2}{3}$.)

5. A and B each lend \$5000 for three years, one at $4\frac{1}{6}\,\%$, simple interest; the other at 4 %, compound interest. Find the amount of interest each receives.

6. Find the entire cost of enclosing a square field containing 10 acres by means of a wire fence when the wire costs 60 cents per rod, the posts, which are set 10 feet apart, 8 cents each, and the work 40 cents per rod.

7. \$1098. Toronto, Jan. 14th, 1896.
One hundred days after date we promise to pay Wm. Jameson, or order, one thousand and ninety-eight dollars, with interest at eight per cent.
HODGENS BROS.

Find the proceeds of this note when discounted at a bank on March 12th, 1896, at 10 per cent. (year = 366 days).

8. Find the perimeter of a right-angled triangle whose area is 270 square feet, and the base 15 feet.

SOLUTIONS.

BY THE EDITOR.

1. First fraction $= \frac{35}{90} \times \frac{909}{1400} = \frac{1}{4}$.
Second " $= \frac{13}{30} \times \frac{10}{13} = \frac{1}{3}$. Ans. $\frac{7}{144}$.

2. (a) See Pub. Sch. Arith., p. 186, for approximation formula.

The formula is $\frac{N + a^2}{2a} = r$, the first approximation; and $\frac{N - r^2}{2r}$ is to be added for nearer approximation.

As the root evidently lies between 1 and 1.1, assume 1 as the approximate root = a; $\therefore r = 1.05$, by substitution;

and $1.05 + \frac{1.1 - 1.05^2}{2\,1} = 1.05 - .00119 = 1.04881$, which is correct to four places.

N.B.—

The formula $a.\frac{3N + a^2}{N + 3a^2}$ gives three figures correct on the first application, thus

$1.\frac{3.3 + 1}{1.1 + 3} = \frac{43}{41} = 1.0488$ nearly.

The advantage of these methods resides in the ease with which a large number of decimal places can be obtained. For proofs of these formulas see Algebra.

(b) If the number is a perfect cube we can generally write down the cube root at sight, thus: There are three figures in the integral part of the root, and the right-hand figure must be 5, of which the cube is 125. And 1953 is greater than 1728 and less than 2197; hence the first two figures must be 12. The formula $a^3 + b^3 + 3ab(a + b)$ gives an easy means of verification, thus: $1728 + 125 + 3 \times 60(17) = 1953125$.

3. First income = \$150. Selling price = $86\frac{1}{4}$; buying price = 115. No. shares of new stock $= (50 \times 86\frac{1}{4}) \div 115 = \frac{150}{4}$ shares of \$100 each.

$\therefore$ second income $= \frac{150}{4} \times 4 = \$150$. Income is unchanged.

4. Gross proceeds $= \left(\frac{30{,}000}{112} \times \frac{46\frac{2}{3}}{20}\right) \frac{99}{100} \times 4.86\frac{2}{3}$
$= \$3{,}011.25$

$\therefore$ price per lb. $= (3011.25 - 86.25) \div 3000 = .975 = 9\frac{3}{4}$c.

5. A.'s interest $= 5000 \times \frac{4\frac{1}{6}}{100} \times 3 = \$625$.

B.'s interest $= 5000(1.04)^3 - 5000$
$= 5000(1.04^3 - 1) = 5000 \times .12486$
$= \$624.30$ nearly.

6. 10 ac. = 1600 sq. rods, $\therefore$ side = 40 rods; perimeter = 160 rods; wire and work = \$1 per rod; number of posts = 324;

$\therefore$ cost = \$160 + 21.12 = \$181.12.

7. At the end of the period there will be 103 days' interest due on note. On March 12th the note has still 103 − 58 = 45 days to run;

$\therefore$ interest $= 1098 \times \frac{103}{366} \times \frac{8}{100}$.
Bank discount $= 1098 \times \frac{45}{366} \times \frac{10}{100}$.

Difference $= 1098 \times \frac{824 - 450}{36600}$;
$= (1098 \times 374) \div 36600 = 11.22$;

$\therefore$ proceeds = \$1098 + 11.22 = \$1109 22.

8. Let h = hyp.; p = perp.; b = base = 15;

$\therefore$ area $= \frac{1}{2}bp = 270$;

$\therefore p = 36$; $\therefore h = \sqrt{(36^2 + 15^2)} = 39$; and perimeter = 15 + 36 + 39 = 90 feet.

School-Room Methods

A TIME-SAVING METHOD.

BY WILLIAM MCKENZIE, BALDOON.

With the busy teacher in the ungraded school the question of time is a very important one, and any methods for economizing time are eagerly seized upon. I suppose every live teacher has some method peculiar to himself for making the most of the time at his disposal. Now, if we would make THE JOURNAL more a medium of exchange of methods, and thus let all our methods become the common property of the profession, many of us would, doubtless, be greatly benefited, and certainly no one would be injured. With the kind permission of THE JOURNAL, I would like to tell my fellow-teachers some of my ways of economizing time. I do not claim for them anything original or startling, or even out of the common; but merely hope that they may be of some use to some busy teacher in an ungraded school.

Of course, every teacher who is anxious to succeed has his day's work prepared before entering the schoolroom. I have found it a good plan to put on the board, before nine o'clock, an outline of all the work to be done before recess—the outline for each class by itself; then at recess to put on an outline of the work to be done between recess and noon, and so on through the day. The pupils, as soon as they take their seats, know exactly what they are to do, and no time is lost in telling them what to do. This has its disadvantages, however. The teacher should be on the playground at recess, and part of the noon hour, too, if possible. Consequently, I have had recourse to what I might term an improvement on this plan. I procured a coyping pad, and every evening I strike off enough copies of the outlines for my third, fourth, and fifth classes. This does away with a good deal of writing on the board. What is this outline like? Let me explain. As I write, my third class's outline for to-morrow is before me. In the first place, there are the problems in arithmetic (I do not like the text-book). Then there is the time stated for drawing. Next comes the work in composition. The work in reading and spelling follows. The questions in literature that are to be answered on the slates come next, and then there is the work in grammar. The advantages of this, I think, are apparent, and need not be enumerated here. Suffice it to say that the children know just what they have to do and

* The last three figures, 958, are scored out.
† The solution of 2 (a) is not in Mathematical Editor's "copy." Probably through accident or oversight.—ED. JOURNAL.

no time is wasted in making explanations. The extra work is not much. The work has to be prepared, anyway, and I think the time and worry saved the teacher during the school hours will amply repay him for the little extra trouble he has been put to on the previous evening. If THE JOURNAL think these hints of any value, I shall be glad to give a few more on "busy work in arithmetic" later on.

[We shall be glad to have the hints on busy work.—ED. JOURNAL.]

A METHOD IN HISTORY.

For history review have each pupil bring to class ten questions written on separate slips of paper and signed. Mix all these well and in a suitable box, and let the pupils in turn draw questions from the box to be read and answered. If any pupil is not able to answer the question he has drawn, he may call upon the proposer to answer for him, or be required to look it up himself. If any pupil draws a question of his own proposing, he may call upon any member of the class he may choose to answer it. Keep a list of questions missed for future use. The same plan may be pursued in other branches of study. If slightly modified each time, the above plan may be used frequently to the great advantage of the class—*Exchange.*

Hints and Helps.

A DIFFICULT CASE.

To the Editor of THE EDUCATIONAL JOURNAL:

SIR,—I have for two years now been a reader of your inestimable journal, and have received from its pages many valuable lessons and hints and much assistance in my work. But during the last year I have been face to face with a problem, in the solution of which I have not been able to receive just what I need; therefore I am going to send you a statement of my difficulty, hoping that some of my fellow-readers, of larger and more varied experience, may be able to give me some hints.

A year ago I took charge of my present school. The pupils, thirty-three in number, were a fair representation of a country school, containing some bright ones and some duller ones, some quiet ones and some more mischievous ones. Among them was one boy, J——, who could not attend regularly, as his father lay on a sick bed, and he had to be kept at home to assist his elder brother. He was twelve years of age, and in the senior fourth class; fairly intelligent in history, reading, and spelling, but very dull in arithmetic, grammar, and geography, and also a most miserable writer. These subjects I could not get him to study. He took no interest in them, and said he knew enough of them for a farmer, and did not see any use in learning any more. He did not want to leave school, liked to come, and wished he could come every day. First I tried to arouse his interest, tried to get him to rival the others in his class, and would point out to him what the juniors were doing and thus try to shame him. But, all the same, his answer was just a laugh and "I don't care." I then gave him a seat by himself, right up in front of my desk; and, finally, when my stock of patience had almost exhausted itself, I gave him fair warning about his idleness, and then punished him, but all of no use.

In the early winter his father died. When J—— came back to school I again reasoned with him; spoke to him of his love for his father's memory; of his mother's sorrow, and how he was adding to it by not doing as she wished him to. The tears ran down his cheeks, and he promised me that he would faithfully try to overcome this lack of interest in some of his school work. For some time there was some improvement in his work, but he gradually fell back into his old habits. Sometimes he would come to school late, and at other times ask to go home a little earlier, on account of some work he had to do, until he began to think he could come and go just as he pleased. This caused some trouble at home with his mother, who tried hard to send him to school in time and to get him to do his work faithfully; but he would not. One morning he came in at 9.40, did not report to me, as was the rule when late, but took his seat and set about his work. The other pupils would look at him and then at me, to see what I was going to do. I saw at once that the discipline of the school was at stake, so I made up my mind to keep him after school while, in the meantime, I considered the matter.

At recess his mother came, and from her I learned that it was his own fault that he was late that morning, and many times before; that there was no necessity for him to be late, or to leave school before the regular dismissal; that he would not come to school that morning until she told him she would come to school and tell me all about him. Then followed a sad tale of a fond but weak mother's struggles with a favorite but wayward child; and, finally, she declared she could do nothing with him, and appealed to me for help, saying that he was more afraid of me. After this time a week went by, during which I said nothing to J——. He was regular and punctual, his lessons were prepared, and his conduct was excellent. But the seventh morning he did not come until recess. That afternoon I kept him after school, and told him in plain terms what had to be, and what the consequences would be at any future failure. Since then his work has been done a little better, but it has to be dragged out, and I am not satisfied with the condition of things. There is friction where there should be none. I have failed to arouse his interest, I have failed in governing through love, for the first time in my eleven years' experience.

This problem haunts me day and night. I have studied the boy, I have talked with him on subjects outside the school. I have visited him in his own home, but I have failed to get hold of the right chord to cause him to govern himself. I hope some of my brother and sister teachers will be able to help me, for the boy's own sake, to so deal with him that I may assist and not hinder him in the formation of a noble character.

Thanking you for your assistance in the past, and wishing you still greater success in the future,

I remain, fraternally yours,

A. H. P. MATTHEW,
Box 56, Langley, B.C.

Book Notices.

"SELECTIONS FOR FRENCH COMPETITION." By C. H. Grandgent, director of modern language instruction in the Boston public schools, formerly tutor in modern languages in Harvard University. Publishers: D. C. Heath & Co., Boston.

This is a small but comprehensive and well-arranged text-book, containing a varied and graded series of exercises in French composition suitable for all classes of pupils in schools and colleges. The two opening chapters contain simple paraphrases, based on preceding French exercises, and adapted to the use of beginners. The following two provide exercises in narrative form; the remaining ones deal respectively with practical letter-writing, description, and literary criticism. The admirable feature of the book is the frequent recurrence of ordinary French phrases and idioms, which cannot fail to impress them upon the memory of the student.

CLASSICS FOR CHILDREN—SELECTIONS FROM EPICTETUS. Long's Translation. Edited by Edwin Ginn. V + 240 pages. Ginn & Company, Publishers, Boston, U.S.A.

The peculiar excellence of the writings of Epictetus consists in their simplicity and their noble earnestness. Real heartfelt love of good and hatred of evil are strikingly exemplified throughout his works. He recognizes the contest between good and evil and the life-struggle in the heart. He affirms the necessity of God's assistance in the strife so that the inner life may become pure as God is pure. The editor of this edition of Epictetus, which is especially intended for the use of young people, has aimed to give in a small compass the choicest sayings of this celebrated philosopher, from whom Marcus Aurelius drew much of his inspiration. The great principles which underlie all activity and character are so tersely and so wisely set forth by this great Stoic that his writings serve admirably to train young people to endure, with greater fortitude and composure, the trials of life.

THE HEROIC READERS. London: Jerrold & Sons, 10 and 11 Warwick Lane.

These readers comprise a series of five books, Nos. 1, 2, 3, 4, and 5, graded in difficulty to suit five different stages of advancement in the public schools. They are published as a part of *The Empire Educational Series.* The general character of the contents is indicated by the title. They consist very largely of graphic descriptions of daring deeds done by individuals for the accomplishment of noble ends. Some of these are narrations, in stirring and fervid style, of events which have passed into history, and are consequently more or less familiar. Others will be new to most readers. All are, we infer, records of actual events, biographical or historical. All are evidently intended, and most, or all, adapted, to set before the mind of the pupils lofty ideals, and to stimulate them to emulation of deeds of unselfish and noble endeavor. Of the whole, it may be safely said that they possess the great merit in books of the kind, of being intensely interesting to children. They are brightly but neatly bound. Another valuable quality—the type is large in the smaller numbers and beautifully clear in all. We have seen few, if any, books better adapted for supplementary reading in our Canadian schools.

The price ranges from eightpence for the First Book to one shilling and sixpence for the Fifth.

Literary Notes.

THE OCTOBER ATLANTIC.

The *Atlantic Monthly* for October is one of the most important issues of the year. There is the usual fine literary flavor to the contents, and this is supplemented by timely papers on political, scientific, and historical subjects. The leading article of the month, by President Eliot, of Harvard, is on "Five American Contributions to Civilization," viz., the practice of arbitration instead of war, the increase of wide religious toleration, the safe development of manhood suffrage, the proof that people of a great variety of nations are fit for political freedom, and, fifth, the diffusion of well-being among the population in general. President Eliot holds these five contributions as characteristic of his country, and in his opinion they will be held in grateful remembrance by mankind for all time; for they are distinct contributions to civilization. Professor John Trowbridge sounds a note of warning in the vigorous article entitled "The Imperilled Dignity of Science and the Law." There is a second instalment of "Girls in Faactory Village," by Lillie B. Chace Wyman, narrating many incidents of girl life in a New England manufacturing village. Mrs. Wyman gives very vivid word-pictures in these little sketches, and writes with intimate knowledge of her subject. Professor Lanciani gives in detail the romantic career of one of the most wonderful structures in the world, in a paper entitled "The Fate of the Coliseum." Mrs. Alice Morse Earl gives a charming glimpse of a Sunday in New Netherlands and Old New York. Mrs. Agnes Repplier prints another of her delightful essays under the title "Cakes and Ale," giving selections from famous drinking songs in literature, and she comments discriminatingly upon them. But the feature of this issue which will attract the widest attention is an innovation. A new department is opened having the attractive title, Men and Letters, to which the best writers will contribute short signed articles on literary subjects, reminiscences, suggestions, criticisms, and the like. The department is opened this month by W. D. Howells with a charming paper reminiscent of his days as editor of the *Atlantic.* He is followed by John Burroughs on "The Poet and the Modern," and W. P. Trent, on reading the 50th volume of Balzac. Exhaustive book reviews and the Contributors' Club complete the issue.

The greatest care should be taken to have pupils write figures and signs very distinctly, to arrange their work neatly, and never do one bit of work carelessly.

Habit is a cable; we weave a thread of it each day, and it becomes so strong we cannot break it. —*Horace Mann.*

Primary Department.

LANGUAGE LESSONS.

RHODA LEE.

Some day before all traces of summer are gone have a little language and composition lesson on flowers. Tell the children beforehand that you wish them to be prepared to state which is their favorite flower, and to be able to describe it at some length. If the scholars can write freely, let it be a written composition; if not, an oral exercise. It will not be possible to procure many flowers at this time of the year, but those that are brought may be examined and discussed by the class.

An observation and language lesson on an apple is a suitable one for this season, as every child can have one for himself. The teacher should cut the apple and let the pupil make his own observations, writing them on slate or paper.

When the leaves begin to fall they form an excellent subject for a similar lesson.

At first we allow the children to make the simplest of sentences and alike in form, such as:

I see an apple.
I see a seed.
I see the skin, etc.

Very soon, however, they must be taught to put their thoughts in better form than this. Their observations must be written in a connected and narrative form. For instance: I have a maple leaf. It has rough edges and a great many veins. It is not green now, but is red and yellow. It came off the tree in front of our house.

When a composition shows signs of originality and especial carefulness, read it aloud to the class.

It is of the greatest importance that as soon as pupils have sufficient power over written language they begin to write their thoughts about things. The written answer is immeasurably superior to the oral, in which we are never perfectly certain that the thought is original with the speaker.

READING.

RHODA LEE.

II

Good class arrangement is very desirable in primary grades. Classes at the blackboard should not exceed twenty in number, better work being done with the beginners when the class consists of not more than twelve or fourteen pupils. If the newcomers at the commencement of a term number more than twenty, pick out the brightest as soon as possible and make them into a separate class.

When a class goes to the board for a lesson each child carries his slate and pencil with him. Arrange the children in two rows, the boys at the back, as they are generally the taller. When necessary, of course, a small boy may change places with a taller girl. Leave the space between the rows wide enough to admit of the teacher walking through and examining slates.

The work may be divided into two parts, namely, the eye problem and the ear problem. The latter I have found to be the easier one to grasp, and therefore we make most use of it at first.

In the eye problem the word or sentence is written on the board; the children discover what it is, and whisper it to the teacher. In the ear problem the word is dictated and the children write it on their slates.

For example:

REVIEW OF LESSON I.

Ear problem.—Teacher says, "Write *ma*."

Children write and teacher examines each slate. The pupils will at first utter the sounds aloud as they write. No harm is done by allowing this for a time, but overcome it as soon as possible.

Eye problem.—Teacher writes on the board the word *am*, asks the children to find the word and tell it to her.

As soon as they are able they raise the hand and whisper it to her.

In introducing the letter *t* we speak of him as "the little boy who stuttered." Make the form as simple as possible, calling the cross line the collar, and instruct the children to put it on straight.

We may picture three letters as living in houses, side by side:

In one lived little *A*, in another *M*, and to the third one *T* came. One day they all went out to play. A big dog came along and began to growl at them. *A* took hold of *T's* hand.

at

(Let the children sound and find out what they said.) But the dog would not go away. Then *M* began to feel a little frightened, and he came and took *A's* hand.

mat

(Sound and find the word again.)

Then the dog, when he saw the three together, thought he had better go home, and the little letters went on with their games.

Words which can be made are:

at
mat
tam
tat
ta-ta.

The combining of sounds is the greatest difficulty at this stage of the work. The separate sounds are easily remembered, and the form of the letter steadily improves with use. The one trouble lies in getting the children to put the sounds together and recognize the word.

The best exercise to develop this power consists in the teacher separating words into distinct sounds, the pupils telling her the word. The greater the space between the sounds the greater the difficulty in recognizing the word. We will indicate the space by a horizontal line. The exercise need not be confined to the sounds and letters learnt, although special attention should be paid to these.

Teacher.—M—a—t.
Pupils. —Mat.
Teacher.—T—a—m.
Pupils. —Tam.
Teacher.—T—a—p.
Pupils. —Tap.
Teacher.—S——a——t.
Pupils. —Sat.
Teacher.—D——o——g.
Pupils. —Dog.

A great many exercises can be given in a very short time. The pupils in this, as in the eye problem, raise hands when they are ready to tell the teacher the word. This exercise should form part of every phonic lesson for some time.

A RAIN STORM.

Tinkle, tinkle,
Lightly fall
On the peach-buds, pink and small;
Tip the tiny grass and twinkle
On the willows green and tall.

Tinkle, tinkle,
Faster now,
Little raindrops smite and sprinkle
Cherry-bloom and apple bough!
Pelt the elms and show them how
You can dash!
And splash, splash, splash!
While the thunder rolls and mutters, and the lightnings flash and flash!
Then eddy into curls
Of a million misty swirls,
And thread the air with silver, and embroider it with pearls!

And patter, patter, patter
On the mossy flags, and clatter
On the streaming window-pane.
Rain, rain,
On the leaves,
And the eaves,
And the turning weather-vane!

Rush in torrents from the tip
Of the gable-peak, and drip
In the garden-bed, and fill
All the cuckoo-cups, and pour
More and more
In the tulip-bowls, and still
Overspill
In a crystal tide, until
Every yellow daffodil
Is flooded to its golden rim, and brimming o er and o'er!

Then as gentle as the low
Muffled whir of robin wings,
Or a sweep of silver strings,
Even so
Take your airy April flight
Through the merry April light,
And melt into a mist of rainy music as you go.

—*Selected.*

My ideal of an educational institution is that it should be a home for the development of character quite as much if not more than a school of learning or a place for original research. The longer I live the more profoundly am I convinced that the highest type of character can only be formed on a religious basis.—*Rev. Principal Grant.*

Literary Notes.

OCTOBER LADIES' HOME JOURNAL.

Among its many strong, attractive features, the October *Ladies' Home Journal* presents the opening chapters of Ian Maclaren's new story, and one of the best that he has written, "The Minister of St. Bede's"; Ignace Paderewski's long-promised composition for the piano, a minuet — "Menuet Moderne"; and Albert Lynch's "American Girl"—a distinctive characterization of young American womanhood, by the famous French artist—which is shown on the cover. Of exceptional interest also is Hamlin Garland's article on the cliff-dwellers of the southwest, who, under the apt caption of "The Most Mysterious of The Most Mysterious People in America," he describes, and tells of their home-life, customs, religious rites, etc. In "The Most Luxurious City in the World" John Gilmer Speed presents a surprising array of statistics, showing the vast sums spent on luxuries and necessities, amusements, churches and charities in a single American city. Edward W. Bok makes a clever rejoiner to the authors who claim that our literature lacks vigor and force because everything written must be smooth and pleasant to please young girls. Mr. Bok also decries "'talking shop' at home," and points out the value of laughter. Ex-President Harrison discourses on "This Country of Ours." Dr. Parkhurst forcibly discusses "The Young Man at Play," emphasizing the value of healthful diversion. Lillian Bell tells "How Men Fail as Lovers." The conclusion of "The Experiment of the Cloister" is reached. A drawing by W. L. Taylor exquisitely illustrates Virginia Woodward Cloud's poem, "The Mother's Song," and M. Woolf's "Little Comedies" constitute a page of humorous interest. Mrs. Garrett Webster writes on organizing and conducting "Women's Choruses," and John Sparrowhawk presents a practical, illustrated paper, telling how to make "Divans and Cozy Corners." "A Boy's Bookshelf" is dealt with by Thomas Wentworth Higginson. There are articles also upon plant culture, dresses, and of varied household interest besides the usual departments. By The Curtis Publishing Company, Philadelphia; one dollar per year, ten cents per copy.

A Leading Educationist

J. A. McLellan, M. A., LL.D., Principal of "School of Pedagogy," Toronto, a school for the Professional Training of First-class Public School-teachers and High-school Assistants: "I have carefully examined the Standard Dictionary, and compared it with many other dictionaries in my possession with special reference to the points upon which its publishers claim for it a marked superiority over the works now in general use. In my opinion this claim is thoroughly well founded. It would be no easy task to give all the distinguishing features which will make it

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