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THE CANADA
EDUCATIONAL MONTHLY
AND SCHOOL MAGAZINE.

MARCH, 1886.

EDUCATION OF TEACHERS.

BY PROFESSOR M. MACVICAR, PH.D., LL.D.

THE purpose of the present article is to outline briefly the following:—

(1) The principles which should guide the teacher in performing his work.

(2) The means he should use.

(3) The qualifications he should possess in order to use these means efficiently.

No attempt is made in this outline to discuss the views enunciated. The brief notes given are intended simply to indicate the meaning and application of each proposition.

I.—PRINCIPLES OF TEACHING.

1. *The mind can be properly developed and furnished only as its experiences are the direct product of its own efforts, and as these experiences are, by its own efforts, transformed into systematic knowledge.*

Hence, the teacher's work should be confined simply to supplying the conditions,

(a) Which will cause the pupil to acquire by his own efforts such experiences and knowledge of all objects, entities, or realities with which he has to do, as they are capable of affording him;

(b) Which will cause the pupil to investigate and discover for himself so much of the truth and of the principles and laws underlying each subject of study, as will make real to his mind all the elements which constitute the subject studied;

(c) Which will cause the pupil to think and to reason on what is partially or imperfectly known to him, until it is clearly defined in his mind;

(d) Which will cause the pupil to arrange and perform his work in such order as will place him in possession, when his work is completed, of a systematic knowledge of the subject studied;

(e) Which will cause the pupil to express in simple, correct and clear language, at every stage of his progress, the knowledge he acquires.

2. *The mind can exercise only a definite amount of energy at any one time. This amount varies with age, natural capacity and degree of development.*

Hence, the teacher, in performing his work, should regard the following :

(a) The undeveloped mind, such as that of the child, can give attention only to one thing at a time.

(b) In all explanations only one step should be presented at a time, and that step should be held before the mind until it is so sharply defined that it requires but little energy to hold it while a new step is undertaken.

(c) All illustrations should be simple and familiar in order that the mental energy of the pupil may not be diverted from the very thing illustrated.

3. *The mind proceeds from the simple to the complex, from the known to the unknown, from the particular to the general.*

Hence, the teacher should arrange, in all cases, the pupil's subjects of study,

(a) So that what is complex is preceded by the elements of which it is composed ;

(b) So that the unknown is made manifest through its relations to the known ;

(c) So that a sufficient number of particulars must be examined before general propositions or statements are required.

4. *The mind perceives wholes first, then parts ; differences, then similarities.*

Hence, the teacher, in performing his work, should regard the following :

(a) The first perceptions of every complex object of study are vague and indefinite. They are made distinct, definite and comprehensive, by comparison, by which the whole is analyzed into its distinct parts or elements.

(b) Any object or subject of investigation should be studied by resolving it, first, into such parts or units as the mind can view in one act or take in as a whole, then these parts into other parts, and so on.

(c) Each object or subject of study should be analyzed by the teacher into such dependent parts or units as the pupil can take in as a whole ; and these parts should be assigned to the pupil for study and to be analyzed by him into other dependent parts or elements.

(d) The parts or units into which the teacher should analyze an object or subject of study should vary in breadth or size according to the strength of the average mind of the pupils for whom the analysis is made.

5. *The mind must gain through the senses its knowledge of every thing external to itself.*

Hence, the teacher, in performing his work, should regard the following :

(a) The greatest care should be taken to develop the power of each sense by constant and properly arranged exercise.

(b) In every case where possible, when an object is first studied, it should be present to the sense.

(c) When the object studied cannot be present to the sense, as in geography and similar subjects, models should be used, and where this cannot be done, drawings and pictures should be used.

6. *Words, either spoken or written, are simply instruments through which the mind recalls past experiences into present consciousness.*

Hence, the teacher, in performing his work, should regard the following :

(a) The meaning of a word consists of the entities or realities which the word serves to call into consciousness ; first, when the word is used alone ; second, when used in connection with other words.

(b) Words are used for two pur-

poses, namely: to record present consciousnesses and experiences of the mind for future use; and to make known the consciousnesses and experiences of one mind to another.

(c) The intelligent use of a word must always be preceded by a perception of the realities which the word is used, by good authorities, to call into consciousness.

(d) The intelligent statement of a definition must always be preceded by a clear and distinct perception of each of the elements that compose the thing defined.

(e) The intelligent statement of a rule or formula must always be preceded by a clear perception of each step in the process expressed by such rule or formula.

(f) The intelligent statement of a cause, principle, or law, must always be preceded by a perception of the facts which make manifest the true nature of such a cause, principle, or law.

(g) The intelligent statement of a course of reasoning must always be preceded by a clear perception of the data on which the reasoning is based; of the conclusions to be established; of the relation of each subordinate conclusion to its premises; and of the relation of each subordinate conclusion to the final conclusion.

7. *The mind reproduces or recalls its former states and experiences through the association of these states and experiences with what is present at the time they are to be recalled.*

Hence, in order that the knowledge and experiences acquired by the pupil may be kept fresh and vivid, and may be of practical use in after life, the following course should be pursued:

(a) The pupil's work should be conducted so that, as far as possible, the knowledge acquired will be associated with what will occur in the ordinary experience of an average life.

(b) The pupil's knowledge of facts, principles, laws and processes should always be acquired through, and in connection with, the conditions that will actually exist when they are to be recalled for use in after life.

(c) All the pupil's knowledge and experiences should be sharply associated with the words which will constitute the pupil's working vocabulary, so that they may be constantly recalled by the use of these words in practical life.

(d) The knowledge of a language should be acquired by associating its words with the words of the pupil's mother-tongue and with the experiences which will occur in the pupil's daily life, so that the vocabulary of the acquired language may be kept constantly fresh in the mind.

II.—MEANS OF TEACHING.

Teaching proper may be defined as the process by which the teacher places the mind of the pupil in such a condition as will, through its own activity, produce in him, in its integrity, a required feeling, perception, concept, judgment, course of reasoning, action, course of action, taste or habit.

The means by which the process of teaching should be carried on may be grouped under four heads.

1. *The use of special arrangements of the work to be performed by the pupil, or of the elements of the subject-matter under his examination.*

The teacher, in using this means in carrying on his work, must have regard to the following hints:

(a) The work of the pupil as a whole, and each daily exercise, should be arranged with the strictest regard to his age, strength and peculiar environments.

(b) The arrangement should be such that each step prepares the pupil thoroughly to perform the step immediately following with the least possible assistance from the teacher.

(c) The arrangement should be such that each step will rouse the pupil's inquisitiveness with reference to what is still in advance; in short, will leave the mind dissatisfied with its present experiences of the subject under consideration, and create in it a thirst for farther light, and clearer and more extended experiences.

(d) The arrangement should be such as will naturally and necessarily prepare the pupil's mind to receive and understand all subjects directly related to the one under consideration.

(e) The arrangement should be so natural that no waste of mental energy is required of the pupil in fixing the products of his efforts in the memory, so that they may be readily recalled into consciousness, vividly and in their integrity.

2. *The use of an illustration, or series of illustrations, by which the mind of the pupil may be placed in near and vital relation to the real object he is investigating or seeking to understand.*

In the use of this means the following should be carefully noted:

(a) The object of every illustration should be to place what is under consideration in such relation to the pupil's mind that he may be able by his own effort to perform the work assigned. When illustrations are carried beyond this point they are an evil and great injury to the pupil.

(b) All illustrations should be selected from what is known and familiar to the pupil, should be simple and clear, should be new, striking and forcible, and should be presented so as to direct attention sharply to the thing illustrated.

(c) An illustration fails of its purpose if the pupil's attention is so diverted that the illustration itself becomes the object of study instead of the thing illustrated. This is frequently the result where complex and dazzling illustrations are used.

3. *The use of questions is the third and perhaps the most important means of teaching.*

Questions, with reference to the teacher's work, may be grouped under three classes, namely: Stimulating Questions, Testing Questions and Developing Questions. Each class differs from the other two in the end which the questions serve, and hence in the form and nature of the questions. An explicit statement of the relation of these three classes of questions to each other, and the use to be made of each by the teacher, must be reserved for another article. The following suggestions, however, should be noted:

(a) The pupil should be as much the questioner as the teacher. Indeed, until the pupil can ask intelligent questions on the subject under consideration he gives no clear evidence that he understands it. But more, until he can question himself closely upon his subjects of study he has not acquired the true power or art of study, and can receive but little benefit from his efforts.

(b) From what has just been said it follows that the teacher should encourage, in every possible way in his power, the habit, in the pupil, of sharp self-questioning as a means of solving and explaining difficulties, and of gaining clear views of truth. Only such questions should be asked by the teacher as the pupil fails to ask, or is incapable of asking of himself.

(c) The teacher's questions should be of such a nature as to stimulate the pupil to question himself, and to put forth special efforts to master his subject without the assistance of others.

(d) Each question asked should originate in a present and conscious weakness or difficulty of the pupil, which is clearly perceived by the teacher.

(e) Each question asked should be

so expressed and so directed to the pupil's weakness or difficulty as to render him just such help as he is incapable, in his present condition, of rendering himself.

(f) Each question asked should be short and free from ambiguity.

(g) The order in which questions should be asked should always be determined by the condition of the pupil's mind with reference to the result to be secured.

4. *The use of specific directions or suggestions is the fourth means of teaching.*

Such directions or suggestions should conform with the following :

(a) The object in giving directions or suggestions to the pupil should be simply to place him in a proper attitude or condition to perform for himself the work required.

(b) Directions or suggestions should never be in the form of specific rules which the pupil is required to follow blindly in performing his work.

(c) They should simply indicate to the pupil how he is to find out what he must do to secure the required result.

(d) They should be such as will confine the pupil strictly to the kind and course of effort necessary to secure the required results.

III. QUALIFICATIONS FOR TEACHING.

Qualifications for teaching are both natural and acquired. Teaching is an art as well as a science. And, in as far as it is an art, so far power and efficiency, is largely the product of severe and persistent training. The sculptor, painter, or musician, however great the natural talent, cannot rise to the first rank among masters if he neglects or is unwilling to submit to the severe training necessary to place his whole being in the right condition to execute his pure and exalted ideals. Teachers must, in like manner, whatever their natural

gifts, submit to severe training if these gifts are to be fully and efficiently utilized in their profession.

The following propositions and suggestions regarding the teacher's qualifications should be carefully noted :

1. *The teacher should possess the power of holding vividly in his mind, while conducting his class, the results which he seeks to secure and the general course the pupils must pursue to reach these results.*

(a) This power is largely the product of constant practice in making analyses and in forming descriptions, definitions, etc., not by recalling the words of another, but from the picture held in consciousness of the thing analyzed, described, or defined. Where this course is persistently followed, it will develop, in time, the power of forming vivid mind-pictures of everything undertaken.

(b) The exercise of this power depends upon having formed the habit of retracing carefully, after a result is reached, the course pursued in reaching it, and noticing the mistakes made. A teacher who has formed this habit, when required to guide another in doing a piece of work, will at once recall a vivid picture of the course he regarded as the best when he performed the same work himself.

(c) Where the teacher is defective in this power, every step in his work must necessarily be detached. What he does for his pupils must lack unity and point, hence the pupils' efforts must be largely wasted upon what has nothing to do with the result sought.

2. *The teacher should possess the power of perceiving quickly and sharply, while performing his work, the real condition of the pupil's mind with reference to the results sought to be secured.*

This power is largely the product of (a) The teacher's sympathy with his pupils in their work. Where this

exists he will be sensitive to the pupils' wants and difficulties and will be ready at once to render necessary help.

(b) The habit of observing closely the countenances, acts, language and manners of the pupils, and reading from these their wants and difficulties.

3. *The teacher should possess the power of inventing simple and pertinent illustrations at the time they are required in class, which will call into service the pupil's present knowledge, and hence place him in a position to understand the difficulties encountered and to perform the required work.*

(a) This power, so far as it is acquired, is the product of a persistent effort, to note the difficulties that may occur, from all possible standpoints, and to devise simple illustrations, by which these difficulties can be made clear to a pupil occupying any one of these standpoints. This effort be put forth, while examining the subjects, before presenting them to the pupils.

(b) When the teacher prepares his work for classes as indicated in (a), he will form the habit of noting difficulties and how they can be made plain, and hence will very soon accumulate a large range of illustrations which will only require to be slightly changed to apply them to new difficulties as they occur in class.

4. *The teacher should possess sufficient knowledge to enable him to guide the pupil properly in acquiring a correct and thorough knowledge of the subject taught.*

This includes, at least, the following:

(a) A correct and exhaustive know-

ledge of the subject presented to the pupil;

(b) A thorough knowledge of such subjects as have a necessary connection with the subject presented;

(c) A correct and thorough knowledge of each pupil's present attainments, and of his present and past environments;

(d) A correct and thorough knowledge of the connection which the subject presented sustains to the pupil's previous work.

5. *The teacher should make special preparation upon each subject before attempting to present it to his pupils.*

This includes at least, the following:

(a) He should fix in his own mind definitely and clearly the results which he proposes, in the course of the discussion of the subject, to fix in the minds of his pupils.

(b) He should analyze the subject to be presented into separate dependent parts or units, adapted to the peculiar stage of progress of the pupils, and he should hold these parts in his own mind as a unit, that he may be able to present them to the pupils in the order of their dependence, to study and analyze into other dependent parts.

(c) He should note the *root thoughts*, or important points in the lesson around which details are naturally grouped, that he may emphasize thoroughly these points in his teaching.

(d) He should select with great care all the points in each lesson that need special explanation, and prepare, before going into the class, simple and pertinent illustrations, by which each of these points can be made plain to the pupils, and fixed in their memories.

ECHOES FROM THE CLASS-ROOM—VI.

BY A. H. MORRISON, BRANTFORD COLLEGIATE INSTITUTE.

ON METHODS.

To educate the reason we must proceed after the manner of Socrates. He called himself the midwife of the mind. We must help the reason to come to birth. For this purpose we must use the method of question and answer. It is slow but efficacious. Kant, in his treatise on logic, classifies the methods of teaching under three heads: (1) *acroamatic*, where the professor simply teaches; (2) *erotetic*, where both pupil and teacher ask questions; (3) *catechetical*, where the teacher alone asks questions. It is the second of these which Kant prefers.

THE foregoing extract from Oscar Browning's "Educational Theories" is well worthy the deliberate consideration of the teacher and the student. The teacher, for much of his professional *modus operandi* is involved in the substance of the sentences quoted: the student, for these same sentences are finger-posts on the high road to culture, term synonymous with knowledge; apposite, versatile and exact, together with that refinement of desire and taste, which should ever accompany learning, which should grow with its growth, overlay each successive step in life's ascent, and form the true apex of humanity's manifold being.

It has been too much the rule, I fear, to interpret dogma as infallibility, more especially when that dogma has the countenance of a great name. Trust, which is but another name for faith, is worthy of all praise, but even faith may go too far. The precepts of Mr. Square on the one hand, and of the Rev. Mr. Thwackum on the other, have been, when too rigidly observed, productive of much evil. The first would shackle all senti-

ment in an iron chain of conduct; the second would give the body to the stake and the soul to eternal perdition. We sometimes forget that we too, as individuals, have the privilege of free thought; that we, too, have our reasons stamped with the impress of Nature's great lawgiver, and so, renouncing, for far less than a mess of pottage, the great birthright of our humanity, sell ourselves to the bondage of a name, and fall down to worship the manes of a fallacy. Fielding, speaking of critics and criticisms, says: "The world seems to have embraced a maxim of our law, viz., *cui quique in arte sua perito credendum est*; for it seems, perhaps, difficult to conceive that anyone should have had enough of impudence to lay down dogmatical rules in any art or science without the least foundation. In such cases, therefore, we are apt to conclude, there are sound and good reasons at the bottom, though we are unfortunately not able to see so far." But, I maintain, we should *attempt to see*; then, if reason remain blind, depend upon it, there is some fault in the construction of the lenses through which we peer. As I have before said, it is folly to slight old landmarks. Thoughtless revolutions are to be deployed. But there is such a thing as true reform. And that reform is to be effected, first, by sound study, and afterward by self-reliance and common sense.

There is a medium in all things. It is well to have a sure foundation. But let us first ascertain that it is sure. Then, by all means, let us build rationally, as thoughtful architects of the mind, not as blind copyists, the

dogmatists of a school, who see no beauty and no truth outside of the tenets of their own little coterie. Unfortunately, dogmatic rules have been, and still are, laid down by ignorance, impudence and greed, without any other foundation than self-interest and self-conceit.

I think Descartes, the great founder of the Cartesian philosophy, the author of the memorable axiom, *cogito, ergo sum*, showed his sound sense and true philosophical acumen by first doubting all that had before borne the name of knowledge, and so reasoning *a posteriori*, arriving at the fundamental idea of existence, which seemed to him to be the *one incontrovertible truth*. This very, and, in a sense, only certitude, I take it, proclaims the inherent right of the individual, under certain conditions, to differ, to destroy, to amend, to verify, to create. So thought Origen, the great father of Biblical criticism, the Adamantinos of the early Church. "We are not," he says, "to pin our faith on that which is held by the multitude, and which therefore alone seems to stand on high authority, but on that which results through examinations and logical conclusions from established and admitted truths." Thus only can intellect become progressive, by first striking down the bars of bigotry, to issue from the mew, white-winged, into the great realms of new conceptions and infinite possibilities. If reason be the God-gift, the rudder by which to steer each little bark of life to its desired haven, it cannot prove untrue. 'Tis because the masses do not reason that they go wrong. They are shipwrecked by incompetent pilots. When their own hands should be upon the helm to breast the breakers, they give up the ship to the sophist and the bigot to be whelmed in the swirling waters of unmerited persecution, black despair and infamous death.

Let us examine, by the light of reason and experience, the methods advocated by Kant, to see what of good and what of ill is contained in their individual teachings.

First, the acroamatic method, where the professor simply teaches. This method Kant evidently rejects, as not the most suitable to universal tuition, and why? Not, I suppose, because it is in itself absolutely false or wrong, but because it may be made so by injudicious use. This leads to the question, Is there a use in the method? A very palpable one, I deem. It is the conservator of work in limited time. The lecturer can confine himself strictly to his subject-matter, and illustrate those points alone which demand prominence. He is absolute master of the situation. Therefore is this method especially suited to the class-room of the college, where the intellects are principally adult, where the attention has been trained, and where the note-book is a feature of the institution. But lecture has its uses in far less pretentious halls of learning. What is lecturing but story-telling, and who would not listen to a story well told? If the lecturer be competent, himself awake, himself a believer in the cause he advocates, he shall surely drop some pearl of wisdom that may be gathered and worn by the humblest in his audience. There is too little of story and too much of $x+y$ in intellectual life today, both in the school and out. Ideality with chivalry is dying, and King Addition is tyrannizing in high places and low alike.

Our picture, however, has its reverse. Story-telling may degenerate into prosiness or mere matter of amusement. The more elaborate lecture may tend to over-diffuseness, discursiveness, anecdote without definite aim; or, on the other hand, obscurity, through lack of intelligence on the part of the listener. Vigil-

ance, too, may suffer and a careless habit be engendered. The lecturer may take too much for granted. Himself enraptured with his theme, he not unlikely attributes the same interest to his class. How often he may be disappointed I need not stay to discuss. A happy medium in all things! But who can approach, I will not say reach, it? Only the earnest, thoughtful soul, who learns for himself, thinks for himself, acts for himself. *Non quæ, sed quomodo*. Not Kant but Knowledge; not Socrates but Self. In all humility, in all earnestness, in all hope; but with all confidence and with all determination. This is not self-conceit, but self-dependence. It is but Descartes and Origenes again. It is the true interpretation of the great "saw" of the old Greek, *γρῶθι σεαυτὸν*—know thyself. Chilon, or Thales, or Solon, it matters not. Authorities may differ, but the key to all knowledge is here; for man is but the reflection of a type, the shadow of the infinite verity, and there is no new thing under the sun.

The second or erotetic method, like the first, has its good points and its bad. It is the method of counter-questioning, where both pupil and teacher ask questions. This is the method which the great German philosopher prefers, and with reason. Yet it, too, has its weak points. It may degenerate into irrelevancy, and may lead to incorrect forms both of question and answer. Hence it is imperative, in the first place, to utilize this method as a language lesson, to allow no grammatical error to go uncorrected, to check haste, to aim at accuracy rather than extent, to be thorough rather than diffuse, to restrain rather than expand. This method, moreover, necessitates an expenditure of time; and, again, there is a tendency to digress, which is an evil where time is an object. One question from a pupil leads to another, a second to a

third, a third to a fourth, till, presently, from the earth we reach the stars, from the stars we get to infinite space, from space to cause and effect and abstract ideas and theories. Digressions like these are not evils in themselves, but they may become so if carried to excess, as regards a definite lesson where time is an object. But the uses of the second method are many. It is true induction, leading from the known to the unknown. It expands the reasoning faculties, excites curiosity, ministers to the imagination, trains the child to correct expression, conveys varied information without necessitating direct and formal preparation; in short, it constitutes the child an explorer in unknown realms, not merely an explorer but a discoverer. And that it is an unalloyed pleasure to discover a truth for one's self, every earnest student will bear ample testimony. As the stolen apple is always sweeter than the one legitimately tendered, so is the fact or item garnered by ourselves, unaided, from the fields of knowledge always more prized and better remembered than the one which has been dictated by superior wisdom, or otherwise mastered without effort on the part of the learner.

The third or catechetical method, which is but a variety of the second or erotetic, has advantages, I think, over both of its predecessors for the junior class-room. The one great advantage is manifestly this, that the teacher, as sole questioner, has full command of the matter in hand; consequently there need be little discursiveness or irrelevancy if the questioner be an adept in his art. He can touch upon as much of his subject as he thinks fit; modify his questionings to the individual capacities of his pupils; omit what he deems non-essential; supplement his direct interrogations by others formed in every conceivable style, without fear

of interruption, and without diverging by a hair's breadth from the plan determined on, and so, being master of time and matter, can bring his lesson to a legitimate conclusion at the appointed minute, having covered the space allotted and fulfilled all the requirements of the recitations.

The weak, or rather weakest, points of extempore catechism are perhaps these two: first, the temptation, to which the young teacher is exposed, of confining his questionings to the alert and active, and neglecting the stupid, the phlegmatic, the artful and the ill-prepared; secondly, the temptation, scarcely less strong, to lead by interrogation a pupil into error, rather to disprove a fallacy than to prove a fact. This method of procedure may indeed, by a negative process, convince a pupil that he is wrong; but unfortunately it does not at the same time illustrate to him what is right. Waste of time should be avoided; for time in a

Canadian school, more especially a mixed one, is *invaluable*. Truly the days of youth are few, and even these are curtailed by the stern necessities of a young and struggling community.

After all, there is no golden rule for method but the one already quoted, *know thyself*, to some extent at least; and, to some extent at least, *know thy pupils*. Then let reason, which is thyself, dictate the means to attain the end. A judicious admixture of all methods is perhaps the best. Here, lecture may usefully subserve our purpose; there, Socratic questioning; now, a precept, and now, practice. But above all, thoughtful, common-sense endeavour. This alone rises superior to dogma and to rule. This alone is the method which works for all good and all beauty, which leads to all truth and all trust. The Spirit of the Creative Power manifesting itself in the created, the true image of God, the reflex of the Eternal mind.

SIMILES.

IT is remarkable how many of the wisest and wittiest sayings in the world have been conveyed to it in the form of similitude. Similitude, indeed, in its widest sense, embraces many forms—metaphor, allegory, fable, parable, parody, even pun. But even of simile, pure and simple, it is astonishing how vast a number of the very best things in every branch of literature owe their effect to its employment. And it is curious also to observe how the effect of a fine simile (*a rara avis*) depends upon almost as many different causes as there are branches of literature in which it may occur. Whether it be employed merely as an illustration, or whether it be introduced, as is often the case in poetry, solely for

the sake of its own power, or beauty, or *grotesquerie* of effect, a really fine simile, as Johnson said of Goldsmith, touches nothing which it does not adorn.

Of the lowest order, that of the grotesque, the following from "Hudibras," is a fair example:—

And, like a lobster boiled, the morn
From black to red began to turn.

In this case it will be observed that neither image has anything ludicrous in itself—the great heavens flushed with sunrise, and the lobster boiled to redness. The effect of *grotesquerie* results from the utter dissimilarity of the objects of comparison in all except their single point of resemblance.

If the imageries compared are, one

or both, ridiculous in themselves, the simile, of course, gains effect. In Hood's "Epping Hunt," Huggins is shot over his horse's head into a furze-bush—

Where, sharper set than hunger is,
He squatted all forlorn,
And like a bird was singing out
While sitting on a thorn.

These objects of comparison have again as little as possible in common. It is true that both Huggins and the bird sit and sing upon a thorn; but it is the extreme dissimilarity between the motive and the nature of their melodies which makes the simile effective. It will be seen, moreover, that only one side of the comparison is ludicrous *per se*, namely that of Huggins on his thorn; the figure of the bird is, in itself, quite the reverse. Take now a case where both imageries are separately ludicrous. Mr. Horatio Sparkins asks Miss Theresa Malderton to dance with him.

"Miss Malderton," said Horatio, after the ordinary salutations, and bowing very low, 'may I be permitted to presume to hope that you will allow me to have the pleasure—'

"I don't *think* I'm engaged," said Miss Theresa with a dreadful affectation of indifference, 'but really—so many—'

"Horatio looked *handsomely miserable, like Hamlet slipping on a piece of orange peel.*"

The more this simile is considered, the better will it appear—in fact a finer burlesque simile will not easily be found. It is interesting for another reason—it may be new to many readers. For some reason or other it occurs in the library edition of "Sketches by Boz," and I believe, in no other. Perhaps the passage was added as a happy afterthought to the original; though, if such were the case, it still remains a mystery why it should not have been inserted in *all* subsequent editions of Dickens's works.

Nothing gives point to a piece of satire like an apt simile. A capital instance may be found in Boswell's "Johnson." Boswell had been to hear a woman preach. "Sir," said the doctor, "a woman preaching is like a dog dancing on his hind legs. It is not done well; but we are surprised to see it done at all."

A good simile lives long—its root strikes deep. No phrase of Lord Beaconsfield was more effective than that in which he compared his silent opponents to a range of extinct volcanoes. Nothing in the speeches of Mr. Bright is better known, or oftener quoted, than the comparison of the seceders from his party to the followers of David at the cave of Adullam. Sir Fitzjames Stephen, in his recent book on the impeachment of Sir Elijah Impey, says of the impassioned peroration of Sir Gilbert Elliot's charge, "To me, like most eloquence, it resembles nothing so much as mouldy wedding cake." The effect of second-rate eloquence, as of second-rate poetry, on others beside Sir Fitzjames Stephen, could hardly be more happily described.

Impey reminds one of Macaulay. No one knew the value of simile better than Macaulay himself. To take a single example from his "Essay." Speaking of Southey's changes of political opinion, and desiring to imply that Southey's opinions, whatever change they might undergo, were always in the wrong, he thus proceeds:—

"He has passed from one extreme of political opinion to another, as *Satan in Milton went round the globe, contriving constantly to 'ride with darkness.'* Wherever the thickest shadow of the night may at any moment chance to fall, there is Mr. Southey. It is not everybody who could have so dexterously avoided blundering on the daylight in the course of a journey to the antipodes."

The bitterest invective would not have half the force of this comparison. Surely a more stinging passage never was penned.

Everyone knows Macaulay's observation upon a certain simile in Robert Montgomery's poem.

The soul aspiring pants its source to mount,
As streams meander level with their fount.

"We take this [says Macaulay, with characteristic energy] to be on the whole the worst similitude in the world. In the first place, no stream meanders, or can possibly meander, level with its fount. In the next place, if streams did meander level with their founts, no two motions can be less like each other than that meandering level and that of mounting upwards."

But there are greater poets (thank Heavens!) than Robert Montgomery; and with poetic similes one might easily fill a bulky volume, and a very interesting and striking volume it would be. The first association of the words "poetic simile" is with those long-drawn chains of imageries introduced in succession, chiefly for the sake of their own beauty of detail, in which Homer and Virgil delighted, and which later poets have imitated from them. Quotation here is needless, and would be superfluous. But there is another class of poetic simile which ought not to be passed over in silence. It consists in the same seizure of a chance resemblance which is the essence of *burlesque* similitude; but which, when it occurs in serious poetry, becomes what it used to be the fashion among critics to call "conceit." The following from Alexander Smith's "Life Drama" is an example:—

His heart held a dead hope,
As holds the wretched west the sunset's corse.

This is a pure conceit. There is no fitness, nor resemblance, in the imageries. The west is not wretched; the setting sun bears no resemblance to a corpse. The simile has neither power of illustration nor beauty of

detail. In the same poem occurs another simile, which has also been criticised as a conceit:—

I saw the moon
Rise from dark waves that plucked at her.

But a little consideration will show that this is a piece of imagery of a nature and effect quite different from the first. It is a piece of *description*. It shows with one brief touch what a page of laborious word-painting could not render more vivid—the plunging of the dark and restless waters, and the circle of the slow, white, rising moon. And so in the case of the famous simile of Alfred de Musset, which excited such a storm among the critics at the time of its appearance—it may be defended on the same principle.

C'était, dans la nuit brune,
Sur le clocher jauni
La lune
Comme un point sur un i.

Now, to compare the moon over a church spire to a dot over an *i* may or may not be a conceit. If such a simile occurred in a poem of passion and deep feeling, it would undoubtedly seem cold, fantastic and out of place. But as part of a drawing of scenery, marking the position of the moon, it suggests, by a touch, a vast amount of detail which it would have taken long to describe; it indicates not only the lateral position of the moon, but also her height in the sky—as far in proportion over the spire as the dot is over the *i*. And yet perhaps the illustration is *too* ingenious; the mind of the reader is startled by a sense of incongruity. It is clever—but it is a trick.

Of all poets Moore is the most addicted to the use of simile. His pages absolutely swarm with specimens, generally good, never very bad, always more or less ingenious.

He knew no more of fear than one who
dwells

Beneath the tropics knows of icicles.

This is a fair example of his style. Perhaps a better one is the following :—

And memory, like a drop that night and day
Falls cold and ceaseless, wore my heart away.

Hardly can it be said of Moore's muse, as of the heroine of one of his own songs, "Rich and rare were the gems she wore." The adornments with which he decked her in such profusion do not always keep her from appearing tawdry. For a really great simile one must not search his works. He has diamond dust in abundance, but no Koh-i-noor.

Many poets have a favourite piece of imagery which they do not hesitate to employ several times over. Coleridge, in his earlier days, was constantly bringing in the example of the upas tree as an illustration of faithlessness or treachery—a tree which, if it be not slandered, is accustomed to lull the weary traveller with its specious shade, and then kill him, while sleeping, with its poisonous fumes. Shelley was extremely fond of the image, which occurs many times in his works, of an eagle fighting with a serpent in mid-air.

There is in one of Alexander Smith's poems a rare instance of striking and impressive simile :—

Across his sea of mind
A thought came streaming like a blazing ship
Upon a mighty wind.

Wordsworth's finest line, perhaps indeed the finest in the language, is that simile contained in his apostrophe to Milton :—

Thy soul was like a star, and dwelt apart.

Dante's similes are unrivalled for their *illustrative* power. For example, that of the souls at Charon's ferry, who fall from the crags into the boat *like withered leaves*. How finely does this give the twirling motion of aimless, unresisting and despairing fall!

Again, the spirits in Purgatory gaze with such intentness at the figure of Dante, unfamiliar to their regions, that their brows are wrinkled,

Like an old tailor at the needle's eye.

There is nothing ornamental about this image of the old tailor. It is the vividness with which it depicts the expression on the faces of the peering spirits that makes the comparison effective.

There is in one of Dobell's poems a simile which involves an extraordinarily accurate piece of observation. The song of the nightingale, he says, falling out of the leafy tree,

Rings like a golden jewel down a golden stair.

The excellence of this comparison does not force itself irresistibly in an instant; one might even pass it over without perceiving its full beauty. But observe it closely—the slow beginning—the likeness of the fall of note on note to the ring of gold on gold, as the jewel drops from stair to stair—the gathering swiftness—the distinct sounds at length blending into each other, as the rushing jewel grows in speed, as the notes pour faster and faster from the throat of the rapturous songster, until at last, too swift for utterance, they "close in a thick-warbled ecstasy."

The more closely these points of resemblance are considered, the more clearly will it become apparent that the simile is both fine and bold.

Boldness is often the life of simile—but it requires a great artist to be at once bold and fine. In this respect, no poet can compare with Victor Hugo. The number, the originality and the power of the similes to be found in his verses almost surpass belief. Who was it that compared to *ebony* the style of Tertullian, in its rich gloom and splendour? It was an admirable simile, whoever made it. But instances as bold and as fine as this, and not unlike it in character, swarm in the

verses of Victor Hugo as thick as bees upon a bank of thyme. For boldness of imagination, indeed, he has no rival, except, perhaps, among the Eastern poets—a certain Chinese author, for example, who in one of his poems describing a flock of cranes in full flight says, with a fine excess of fancy,—

They lifted up their voices like a sail.

Nothing quite so audacious as this will be found in Victor Hugo or any other poet of the Western world. But to give a single example of the exuberance with which his genius could pour forth a continued stream of rich and striking fantasies, take the following from a short poem entitled "Sunsets." And here, the object not being to render the poetry of the language, which would be hopeless, but merely to set forth the imageries which it contains, a prose translation may be forgiven.

"O, regard the sky !

"There the moving clouds take strange forms under the breath of the winds. At times beneath their waves the lightning gleams, as if some giant of the sky had swiftly drawn his sword among the clouds ;

"Then appears, hanging in the heavens, a monstrous beast, an alligator broad and striped, with fangs in ranks, against whose leaden flanks the bright clouds shine like golden scales ;

"Then a palace arises—till the air trembles, and all fades, and, strewn along the sky, its vermeil cones hang overhead, down-pointed, like inverted hills ;

"Then that cloud of lead, of gold, of copper, of iron, wherein, with sounds of heavy murmurs, repose the tempest, the waterspout, the thunderbolt, and hell—it is God who hangs them there in throngs, even as within the niches of a dome a warrior suspends his clashing arms.

"Then—all disappears ! The sun, dashed down from high, like a red globe of bronze cast back into the furnace, which falls with a shock upon the waves, upflings like flakes of flame into the zenith the burning foam of the clouds."

The peculiar characteristics of Victor Hugo's style are, generally speaking, not to be found in any writing in our language. There is, however, a passage in Landor, and that, curiously enough, a simile, which reads exactly as if it were a fine prose rendering from some work of Victor Hugo's, so curiously (and of course by mere coincidence) does it reflect the distinguishing marks both of his imagination and of his power. The passage in question describes the funeral pyre in which is about to perish the last surviving citizen of Numantia :—

"He extended his withered arms, he thrust forward the gaunt links of his throat, and upon gnarled knees, which smote each other audibly, tottered into the civic fire. It, like some hungry and strangest beast in the innermost wild of Africa, pierced, broken, prostrate, motionless, gazed at by its hunter in the impatience of glory, in the delight of awe, panted once more, and seized him !"

This passage, fine as it is, is yet by no means uniquely fine among the works of Landor. Of all prose writers few have used the simile so abundantly as he, and certainly none so greatly. One other instance may here be taken from his writings, an instance of a peculiar beauty all his own, and worthy of quotation not more as an example of similitude than for the sake of a most pure and haunting music which makes the very poetry of prose. No verse was ever sweeter.

"There is a gloom in deep love, as in deep water; there is a silence in it which suspends the foot, and the folded arms and the dejected head

are the images it reflects. No voice shakes its surface: the Muses themselves approach it with a tardy and timid step, and with a low and tremulous and melancholy song."

Such should be the language which speaks of love!

What themes have oftenest allured the minds of poets and of dreamers? Love—and life. Similitudes of love alone would fill a volume. And life! How, before the musing mind, its multitudinous comparisons come crowding up in their familiar forms! A flower that fades—a vision in the night—a river flowing to the great ocean—a lamp not everlasting—a

frail bridge trembling above a roaring water—a ship storm-beaten and threatened by every blast—a pilgrimage through many scenes of peril—a strengthless breath, "servile to all the skye influences"—a streak of mist which melts at morning "into the infinite azure of the past." A similitude of life shall give us, in the words of Goldsmith, our last instance. Who that has heard them can forget their deep and quiet beauty?

"Life, at its greatest and best, may be compared to a froward child, who must be humoured and played with till it falls asleep, and then the care is over."—*Temple Bar*.

PUBLIC SCHOOLS AND A PHASE OF MORAL TRAINING.

BY SUPT. B. A. HINSDALE.

SINCE "moral training is pre-eminently the training of the will"; since the rising generation are "exceptionably deficient in the fundamental virtues of obedience and respect for authority"; and since these virtues are "not inculcated in the homes of the majority of our children," some other agency than the home must be relied on if they are to be educated in silence, regard for the rights of others, and, more than all, obedience and respect for authority. What shall this agency be? Not the church and Sunday school, "for the evident reasons that, at the most, it can affect the child but two hours of one day in the week, and its function is merely to quicken the child's religious perception and to touch his heart. It never touches the will, for it has no power to enforce anything." Now the very things that the home (as a rule) does *not* do, and that the church and Sunday school *cannot*, do, are the things that the public school does. The present paper is little more

than an expansion of some of these thoughts.

Prof. Alexander Bain holds that the habit of obedience is our first moral education, and that it is also "by far the greatest part of that education in its whole compass." He also skilfully explains that this education is "analogous to our education in physical laws by personal experience of their working for good and for evil" (*Science of Education*, p. 399). It is probable that this teaching will be assented to by the great majority of those who have given the subject attention; but it is not certain that there will be a like harmony of opinion as to what obedience is. Let us first notice two things that obedience is *not*.

Children are often led by promises and rewards to do what is asked of them. The teacher or parent says, "If you will do so and so, I will give you a plum, a knife, a pair of skates." Or the child says, "I will do so and

so if you will give," etc. A bargain is thus struck, the price paid for compliance depending on several circumstances, as the desire of the child and the weakness of the parent. Generally the arrangement is not made in as formal a way as this; but the high contracting parties come to an understanding. Multitudes of children are managed, for the most part, in this way. Now there is a great power in promises and rewards, wisely to use which is proof of superiority in a governor of either children or men; but let no teacher or parent suppose that when a child does something for a plum or a knife, he is obeying. Whatever the child may be doing, he is not *mind*ing.

Then there is the moral-suasion plan of managing children. Here the motive-power is argument and persuasion. Moral suasion says, "Cause the child to see what is right, and then to *do* it because he *sees* that it is right." In its extreme form, this method exacts nothing that the child does not yield both intelligently and willingly; in fact, it *exacts* nothing at all. Now, moral suasion is indispensable,—“sweetreasonableness” all important. To open the eyes of the child *pasi passu* with his growth, to cause him to see the reasons of things, to emancipate him from dependence on another, to make him self-dependent and so a law unto himself,—all this is never to be lost sight of in moral education; but it should be preceded by another and a very different training. Moral suasion, no more than promises and rewards, brings obedience. It may bring what you ask; but when a child does a thing at the end of an argument or exhortation, he does not *mind* you. Of course, if he is excused from responding until he feels the force of your argument, he must be excused altogether if he never does feel it.

Obedience, then, is something very

different from mere compliance with a governor's wishes; something more than an outward doing. Indeed, we can conceive of a child's doing everything that he is asked to do and never once obeying. Obedience consists of two things,—something done and a state of mind. This state-of-mind lesson leads us at once to the affirmative side of the question. Obedience is submission to authority. Obedience rendered to a teacher is the submission of the child's will to the teacher's will; it is the impact of the teacher's mind. Thus, the child obeys, not when he is won over by argument, but when he does what is commanded *because* it is commanded. He may or may not see reasons lying back of authority. He may think it is right for him to do what he does not see the reasons for doing, proceeding on the ground of faith in the governor. This is indeed essential to obedience in the highest sense, since obedience moves in the field of faith or trust, rather than in the realm of sight or knowledge. In fact, moral suasion makes the noblest kind of faith impossible.

These remarks will, no doubt, be offensive to moral sentimentalists. Hence, I will add, what has been said does not imply any unreason or cruelty on the part of the parent or the teacher. Government may be reasonable and just, and may be administered in love, and yet the governor insist that authority have all its rights,—insist that things be done because he requires them. Sometimes children are, for the time, incapable of understanding the reasons for many things that they do; moreover, the need of promptness and despatch often precludes the explanation that they could understand. Proper obedience contains, at bottom, an element that may, with small abuse of words, be called *instructive* and *spontaneous*. Of course this is an acquired element;

but its acquisition begins so early and is so thorough that it may be assimilated to the instructive emotions.

Speaking of large schools and of small, Mr. Quick says the moral atmosphere of the first is, as a rule, by far the more wholesome, and quotes two or three writers in support of his opinion. One of these says, "Fifty boys will be more easily leavened by the wickedness of five than five hundred by fifty" (*Educational Reformers*, pp. 72, 288). However the last opinion may be, there is moral power in mere numbers. Other things being equal, pupils are more chastened, and have a better knowledge of their relations to the world, in large schools with many teachers than in small schools with few teachers. Personal power counts for a great deal in education, but it does not count for everything.

Now public schools, by the very law and condition of their life, are admirably adapted to inculcate the virtues of silence, attention, obedience and respect for authority. This adaptation is particularly prominent in the schools of large towns and of cities. Influences that often make no end of trouble in the district schools of the country, and sometimes in academical and collegiate schools, are here almost unfelt. A large system of schools and large schools, are proof against these influences by their very size and strength. They are too large and too well grounded to be shaken by small disturbances. Sometimes a district school is disturbed, and even

disorganized by one or two pupils and their families; sometimes an institution of higher learning is much shaken by a small number of pupils or patrons; but a well-ordered system of public schools is superior to such forces. The teacher, and even the superintendent, may be annoyed; but the pupil and patron soon learns that he can make small impression upon authority and discipline. An ice-cake "bobs" up and down, but an ice-field moves on quietly and almost resistlessly. You jump on a saw-log in a Wisconsin creek, and cause it to roll and perhaps careen; you jump on a Mississippi raft, and do not produce a tremor. I am not, indeed, saying that these schools are, or ought to be, superior to public discussion and criticism; but only this—that they are, in the main, superior to the individual wiles and wilfulness of individual pupils and patrons. Thus, the very size and strength of a school, and still more of a system of schools, become moral powers.

If it be said that there is another side to this question, that the very strength of public schools sometimes prevents accommodations of discipline to individual cases, and that the very immunity of teachers and superintendents sometimes makes them unsympathetic and arbitrary, I hasten to grant that this is *sometimes* true; but notwithstanding, our public schools, particularly in the present condition of American society, are indispensable instruments of moral discipline. —*Journal of Education, Boston.*

WE see by the *St. Thomas Times* that there is a difficulty among the secondary schools of the county over the division of the County Grant. The Principal of the Collegiate In-

stitute, *St. Thomas*, states that the Institute has been unfairly treated by the County Council, in not giving its proper share of the grant to the school in the city of *St. Thomas*.

SCRIPTURE LESSONS FOR SCHOOL AND HOME.

BY THE REV. J. WYCLIFFE GEDGE, M.A., INSPECTOR OF SCHOOLS FOR
WINCHESTER, ENG. (NOTES FOR TEACHERS.)

NO. 1. ISHMAEL.

I. **ISHMAEL AT HOME.** (Read Gen. xvii. 20-27.) Picture the family and surroundings. Abraham a great chief—rich in cattle, silver and gold (xiii. 2)—held in high esteem—won a great victory over the kings of the Plain of Sodom—honoured by Melchizedek (xiv. 19)—but one great sorrow—no heir. One been promised, but not yet born, though Abram a hundred years old. Meanwhile had taken a second wife—Hagar, a bond-servant. Ishmael her child. What does God say about him? (Verse 20.) Showed that Abraham had (a) *Prayed for him*. The prayers of righteous man avail much—happy child for whom his father daily prays! More than that, he (b) *Dedicated him* to God by rite of circumcision. So far all went well. Ishmael lived happy life at home.

II. **ISHMAEL CAST OUT.** (Read xxi. 1-21.) A change in the home. Sarah's child born at last. He to be the heir. Must be honoured as such. A great feast held when Isaac weaned. All must come and rejoice. But what does Ishmael do? He now seventeen years old—perhaps amused at his name Isaac (laughter). Perhaps scornful at the honour done to the little baby. No wonder Sarah angry. What does she insist on Abraham's doing? Ishmael must leave home. Yes—but goes away under God's protection and with his father's blessing. No real harm can come to him.

So Hagar and Ishmael leave their home in Canaan—travel down south towards Egypt. But trouble soon

comes. Water spent—no wells near—journey long and tedious—sun scorching. What does Hagar do? Gives way to despair (verse 16). What does Ishmael do? He prays, for "God heard the voice of the lad." See the effect of early training, of being taught to pray. He called on the Lord in trouble, and was delivered. (Psa. xxxiv. 15.) Water was found—both were saved—Ishmael grew up a famous man—head of a great race still living in Arabia.

III. **LESSON.** (1) *Sin brings suffering.* Lesson to elder brothers and sisters as to the treatment of younger ones. Must set example of kindness instead of teasing, etc. (2) *Prayer brings relief.* Children often have to suffer—insufficient food, clothing, etc.—sickness, trouble of various kinds. Let them early learn to pray. None ever called on God in vain.

TEXT. *When I was in trouble I called upon the Lord, and He heard me.*

NO. 2. ISAAC.

I. **ISAAC PROMISED.** (Read xvii. 1-8.) Spoke of Abraham in last lesson. Had been called from his own country to live in Canaan (xii. 1-4). Had moved with large number of herdsmen, etc.—crossed the great river Euphrates—hence called the "Heber" or "Hebrew," meaning the "man who crossed over." Now living in Canaan—settled peaceably among the inhabitants—but as yet no possession in the land. (Acts vii. 5.) Now God appears to him. What does Abraham do? *He worships—falls on his face. He listens. What*

does God promise him? A large family—he is to be father of many nations; also God's special blessing. *He believes.* Is kept waiting for Isaac's birth—his seed does not enter Canaan till 400 years have passed—but his faith never fails.

II. ISAAC SACRIFICED. (Read xvii. 1-18.) Isaac now the only son at home—about twenty-four years old—last heard of when Ishmael sent away. Been the comfort of his father and mother in their old age (verse 2), and devoted to his mother (see xxiv. 67). Now Abraham's faith is "tempted," *i.e.*, tested or tried. Question on the familiar story. See what it teaches about Isaac. He has been trained by his parents in three things—(a) *Worship.* What does Abraham say to the servants? (Verse 5.) Probably he and Isaac have often worshipped together before. Find Abraham, wherever he went, always building altars and worshipping. (See xiii. 18; xxi. 33.) Prayer, praise and sacrifice for sin would be their worship. (b) *Faith.* What question did Isaac ask? Abraham tells him that God will provide the

lamb. Isaac believes, and asks no more. So all through the story—his faith is strong—a worthy son of the "Father of the Faithful." (c) *Obedience.* Faith without works is dead. Isaac shows his trust in God, and trust in his father, by patient submission. How easy for strong young man to resist aged father. But lets himself be bound without a murmur—lets Abraham raise his hand and draw the knife without a word or movement! Had his reward—was himself blessed by God—had long, happy, useful life, died in good old age.

III. LESSONS. Isaac's life a long example of happiness of early training. Was brought up in fear of God. Children may learn two lessons—(1) *Duty of prayer.* Happy home when children taught to pray. Prayer should be regular and earnest, both for selves and others. (2) *Duty of obedience.* To parents—not questioning commands—not arguing if do not understand. To teachers, as those in place of parents. All to be done as a duty to God.

TEXT. *Happy is the man that feareth the Lord.—Quiver.*

NOTES FOR TEACHERS.

LITERARY AND HISTORICAL SOCIETY.—A crowded assembly met in the hall of the Literary and Historical Society of Quebec to listen to the Rector of the High School, Dr. John Harper, F.E.I.S. As announced, his subject was "Quebec and Literature," and his lecture was a very complete and interesting sketch of the events connected with the literary society founded by Lord Dalhousie in 1824. Before taking up his subject proper, Dr. Harper combated with much spirit the ridiculous prejudice which leads some people to think that the colonies are barren of great men, and cannot be expected to add to the

highest renown of human intelligence. In this connection he scored a victory against the millionaire Andrew Carnegie, of New York. Afterwards the lecturer gave the history of the Society, doing justice to the founders of the Association; and, referring to the abilities of Chief Justice Sewell, General Baddeley, Admiral Bayfield, Abbie Holmes, J. M. Lemoine, etc., he spoke in the highest terms of the aptitudes of Canadians who, according to him, are called upon to play a brilliant rôle in all the arts and sciences. The original poem in honour of Robert Burns, which the lecturer declaimed with great eloquence,

an industry like their own ; the boys in study and business, and the girls in study and household cares. Thus was I saved from being a literary lady who could not sew ; and when, in after years, I have been insulted by admiration at not being helpless in regard to household employments, I have been wont to explain, for my mother's sake, that I could make shirts and puddings, and iron and mend, and get my bread by my needle, if necessary, as it once was necessary for a few months, before I won a better place and occupation with my pen."

Doubtless, exclusive home training is not the best, even for girls. School checks eccentricity, detects weaknesses, gets rid of affectations, supplies keen stimulation and variety of daily intercourse, all of which aids to harmonious development may be more or less lacking at home. Hence it is that the admixture of school and home which a good day school ensures, seems to us, whatever may be the case with boys, to be the best means of securing wholeness in a girl's education.

EDUCATION AND SUCCESS.—College education, considered as a preparation for active life, has suffered, and must always necessarily suffer a good deal, from the sort of conspicuousness which surrounds undergraduates and graduates, and from the high expectations which the expense and elaboration of a college course naturally create in the minds of parents and guardians. The truth we believe to be that at twenty-one the chances of achievement and comfort and foothold among successful men at thirty are as good for the graduate as for the boy in the store, or in the machine-shop, or the counting-room. The ability after saving, borrowing, or inheriting \$10,000, to invest it in a business in which it will go on yielding twenty or thirty per cent. for a series of years—say

ten—in the teeth of competition, is, we believe, as rare as ability to succeed in any of the learned professions, and is as little the creation of training of any sort.

Training is of enormous value. Nobody can rate its power more highly than we do. But we are inclined to believe that in most discussions about the conditions of success in life, as in most of the recent discussions about college curricula, a great deal too much has been made of it. It cannot either harm or help a man nearly as much as many people imagine. We doubt very much, for instance, whether Mr. Charles Francis Adams, jr., was nearly as much damaged by the attempts to teach him Greek at college as he fancies he was. And no elective system, and no substitution of modern for ancient languages, or of science for literature, is going to make the human brain much more capacious or receptive than it now is. In spite of all the improvements made of late years in educational machinery, the difficulties of effecting an entrance into the pupil's skull remain very much what they used to be. This applies to the store and the shop and the counting-room as well as to the school and college. Every one of them does something toward enabling a mediocre man to earn his bread. But none of them does much to enable an able man to win the prizes of life. Hence attempts to formulate the conditions of success are rarely satisfactory. Most of the books which tell young men how "to make their mark" are ludicrous failures. Success in life in all the callings means ability to

Grasp the skirts of happy chance.

And breast the blows of circumstance.

No man can be either taught to do this, or be hindered from doing it by teaching. In winning the prizes of life the "personal equation," as it is called, does nine tenths, the education not over one tenth of the work.

In other words, it is easy to educate a man to earn a bare livelihood, but nobody can be educated to take a seat on the front bench, or be prevented from taking it by any particular kind of education. So that we think it may be safely said to any youth who feels he has the seeds of

greatness in him—that is, has the right kind of moral constitution—that it cannot hurt him to go to college, even if he means to be a machinist or a dry-goods man, while it is likely to add enormously to the finer pleasures of a prosperous career.—*The Evening Post.*

GEOGRAPHICAL NOTES.

THE EUPHRATES.—The once mighty Euphrates seems likely to disappear altogether, according to the *Times of India*. For some years past the river banks below Babylon have been giving way, so that the stream spreads out into a marsh, until steamers could not pass, and only a narrow channel remained for the native boats. Now this passage is becoming obliterated; and unless matters improve the towns on the banks will be ruined, and the famous river itself will be swallowed up by the desert.

CRUSOE'S ISLAND.—From the *Philadelphia Press* we gather some interesting facts about Robinson Crusoe's, or Alexander Selkirk's, island as it is to-day. They are these:

"Opposite the harbour of Valparaiso stands the island of Juan Fernandez, sacred to the memory of Robinson Crusoe 'and his man Friday, who kept things tidy, and listened to the tales that his master told.' The little harbour is there, with its rocks and caves, just as it was when Robinson went ashore; the cave is in good order still, and the cliffs up which he and Friday used to chase the mountain goats. The goats are there, and the armadillos, the birds of wonderful plumage, and the crawfish among the rocks. Every boy who has read the story recently could go all over the place without a guide,

and could find everything except Robinson himself and the faithful Friday.

"The island belongs to Chili, and is leased to a cattle company who have 20,000 or 30,000 head of cattle and as many more of sheep grazing over the hills. There are about fifty or sixty inhabitants, ranchmen with their families, under the charge of a Frenchman named Craze; and besides the stock, they raise a quantity of poultry, and ship chickens and eggs, with some vegetables, for the Valparaiso market. The timber on the island is said to be of an excellent quality, but is not much used. No one ever goes there without bringing away a cane or two as a memento; and the brush from which these canes are made is of a very beautiful fibre, and polishes well. Excursions go over frequently from Valparaiso, and the interest in Robinson Crusoe's experience is much stimulated by those who come this way."

THE CONGO NEGRO.—The uncivilized negro of Central Africa is not a poor and ignorant savage. Judged from a mental standpoint, he is neither poor nor ignorant. He has no poverty of ideas, and his reasoning powers are of a high order. He is deeply superstitious, has the organ of veneration well developed, and shows so great respect for tradition that to call it conservatism hardly expresses its com-

prehensiveness, for even might bows down before it. Incapacity and ignorance are, I opine, attributes relative to the moral and material surroundings of the man, and the stage of advancement to which his tribe has attained. This granted, it is libellous, therefore, to call men ignorant who, like the negroes of Central Africa, show such astonishing capacity, not only in the shrewd way in which they manage their petty affairs of state, but also in putting to its best use all that nature has provided them with—and that with a keen eye to climatic changes and climatic peculiarities. The uncivilized negro regards the white man, not in the light of one with whom he is to put himself in competition, but as a being of altogether different calibre—almost of a different humanity—from himself. He believes that the whites possess powers almost unlimited, and it is always a matter of wonder to him that they allow themselves to be conquered by death. In one instance where a tribe was strong in its belief that white men came from the water, and one of our party was unfortunately drowned, the chief of the tribe would often ask when he would return. It was useless to urge that he was dead, for the chief would always give this pathetic answer: "No; he was tired of the black man, and he went to his home in the water to rest. He will soon return."—*Blackwood's Magazine*.

METHODS IN GEOGRAPHY. — In a journal of late date, some one under the head of "Methods in Geography," proposes twenty practical questions. Feeling a kind of inspiration, I will send you such answers as I would give, though they may not please the proposer.—Z. RICHARDS.

1. "When would you have pupils begin the study of geography, and

how long may they study it without text-books?"

Ans.—I would begin to *teach* geography at *once*, but I would not expect pupils to *study* it at all until they had learned *how to study*. They can be taught a great deal of geography during the first three years without using text-books, but text-books should never be studied until the pupils have become familiar with their language. The language must first be taught with illustrations.

2. "Give a brief outline of the work you would do before taking a book."

Ans.—I would begin by asking them to tell how the full moon looks on a clear night, and the other heavenly bodies, moving through space like so many fire-balls; and that if they could only go to the moon and look up into the heavens, they would see our earth appearing just like a very large moon. This matter I would make as familiar as possible. Then in the next place, I would take a small, properly mounted globe as the best representation of the round earth in the heavens, and stick a pin or make some mark on the globe to show the exact place on the globe where the pupils live. Then I would point out the various pictures, or portions of the earth, as shown on the globe, giving the names neatly written on the blackboard, and teach their relative location, size and forms. Next, make model representations of portions of the earth as exactly as possible, with clay or sand, upon a *moulding table* (1) of the physical features of the earth; (2) of selected portions of the earth, locating cities, towns, rivers, mountains, etc., as accurately as possible.

3. "When, and how, would you teach the definitions relating to the earth and its surface?"

Ans.—When teaching the above "outline," be sure that every pupil

can give the names and terms as soon as the ideas and things are represented.

4. "In what way does map-drawing benefit a pupil?"

Ans.—It gives, or should give, a more accurate idea of the form, relative location, and size of states, countries, etc.

5-7. "Write a plan developing the necessity of a scale."

Ans.—For practical instruction in geography there is no necessity for an exact scale in map-drawing. Every

pupil should be trained daily to receive correct ideas of form and relative size and distances; of straight and curved lines; of angles; of the circle, circumference of circles, and of curved and rectangular surfaces. This knowledge will prepare him to judge of the relative size, distance and shape of states and countries, so as to give outlines of them approximately correct. There is very little practical use of exact map-drawing, except to aid the pupils in becoming skilful in mechanical drawing.—*Journal of Education.*

HOW TO STUDY.

BY W. HARPER, MAINE.

THE following points were prepared by the writer for the use of his own school. Many of them may be profitably enlarged upon by the teacher. Thousands fail in all departments of labour and enterprise for want of sufficiently understanding the principles which underlie success. Many fail, or partly fail, in study for the same reason. But nowhere else is success more important than here.

CONDITIONS.

1. The first requisite is good health. Mental labour taxes the energies even more than physical. A reasonable amount of exercise, plenty of nourishing food, pure air and an abundance of sleep are indispensable. At the same time mental, like physical labour, is in itself healthful; and even those whose health is not vigorous will not only be uninjured, but may even be benefited, by a moderate amount of it.

2. Success comes to no one without earnest, diligent and patient effort. "There is no royal road to learning." Do not expect it.

3. Cultivate a love for study. The

great truths of science and the treasures of literature are worth all the labour it can cost to possess them. To even half-appreciate them will give study a constant attraction.

4. Let your school work have the first place in your interest. "Ye cannot serve two masters." Your evenings should never be spent in such a way as to make it difficult to do good work next day.

5. Never yield to discouragement. To succeed anywhere requires courage and perseverance, and all have their times when things do not look bright. If it is hard to attain excellence in one study, in others it will not be. *Labor omnia vincit*—the phrase, too, dates back to the time of the ancients, and has been found true ever since.

6. Do not worry about results. Those who are really diligent and persevering will always "pass," and with creditable rank; they will also constantly gain power to do better.

METHODS.

1. Do all work thoroughly. Without the spirit of thoroughness it is only a question of time when you

will fail and drop out of school with more or less aversion to study—a poor preparation for success afterwards.

2. Prepare *every lesson* thoroughly. In no other way is thoroughness possible.

3. Let your object be to master the subject rather than the text-book.

4. Beware of imagining that you can make up deficiencies "any time." You cannot. To plan in that way is to arrange for failure. Every future time is likely to bring even more, and probably more imperative, claims on your time than the present.

5. Make your time count. Do not spend an hour, as it is very easy to do, on work that might be as well or better done in half-an-hour. Form and maintain good habits of study; the effort required will be repaid with high interest. Without energetic and self-denying effort, no one has a right to expect success. Study means work, not play.

6. Do not study without thinking. "Read not to believe and take for granted, but to weigh and consider." "To read passively to learn is, in reality, not to learn at all." Not

what you cram, but what you assimilate, is the measure of success.

7. Subjects in which you have most interest may properly receive more attention than others. Your success in life may depend in what you can do in those lines. But good work should be done in all.

8. Liberal and constant use should be made of all books of reference within reach. Without this, a high grade of scholarship is hardly possible. Occasional more extended reading than the reference in hand requires will also be useful.

9. Be alert to acquire general knowledge by reading, conversation, inquiry, or observation, as you have opportunity. Much of the most valuable knowledge is found outside of text-books. It is an excellent plan to have a library, however small, and one or more periodicals of your own. The supplementary knowledge thus gained will also make that acquired in your school work more practical and valuable.

10. Your motto will naturally be either "as much as possible" or "as little as possible." Let it be the right one.—*Journal of Education.*

EDITORIAL.

TEACHERS MUST READ.

THE most accomplished teacher, as well as the freshest graduate from school or college hall, *must read*. Whatever his attainments may be, he *must read*, in order to keep "touch" with the ages past, with that in which he lives, and if at all possible, with the age near at hand, looming in upon him here and there, at odd moments of pensive musing, or earnest thought.

To keep his heart living, and his spirit filled with glowing energy, an educator *must read*. He must read books of the noblest type, composed

by holy men and women, for the enlargement and strength of the toiler. It is an absolute necessity for a teacher to acquire knowledge, to read widely, to accumulate stores of fructifying learning. What shall teachers read? Professional works of course, to these his attention has been directed, while in attendance at the Model School for professional training. But even if the teacher has attended a normal school for a session or two, and has obtained the highest grade certificate, he should unquestionably still pursue this line of study, in order to gain the most ad-

vanced knowledge on all subjects connected with his life work. To secure the highest success teachers should note the practice of members of other professions in this respect. See with what diligence and zeal doctors, lawyers and ministers read books specially bearing upon professional work.

But taking for granted that the teacher reads such works as are fitted to promote the highest degree of efficiency, is this to be the be-all and end-all of the master's reading? By no means. One who has been properly taught to rely upon himself, taught how to value books, who has been prepared, not crammed, to pass an examination, who has developed, before leaving school or college, an inclination for reading or studying in some one direction rather than another, when left comparatively free, and thus thrown upon his own responsibility, will naturally, nay assuredly, move along the line of "least resistance."

The time of freedom having come, the leading-strings being withdrawn, and the novice given an opportunity to exercise his ingenuity and power, he will now select some special line of reading. The fatherly curb of the Minister of Education, exercised either in person, or through his subordinates, in the control and direction of his studies should cease. This care, however well meant, must be abandoned. If the teacher does not possess some individuality we lose one of the first safeguards of liberty. The valuable aid which the officials of the Education Department may be able to give in cheering and stimulating the student pursuing his solitary pleasure of quiet thought consists in showing the teachers throughout the country what can be achieved in various fields of mental effort, rather than in tying them down to a set of books, professional or no; and making them

move (as if the school bell had rung) obediently under the shadow of the Minister. Free men grow not under this style of tuition; men and women of robust thought are not gotten by this process. The teacher must read; he must acquire specific information if he is to impart it to his pupils. He will read to acquire knowledge which, though not absolutely necessary for his class-room, will be serviceable to him by enriching his scholarship, and investing his work with new interest, both for teacher and taught. While fully sympathizing with the object of securing a better workman in the school-room, by insisting on his reading professional books and holding him to such, yet, we submit that these give no new outlook, no new aspiration. They are but the extension of the country school in all its cramping details. For deficient as the novice is in the technics of his art, his greater deficiency is in a realm which underlies all technics—in that which gives him power as a man, which is, by all odds, the first and great essential in the teacher. The literature of bare facts, of information only, of teachership, is the region in which the teacher row marches and counter-marches, accomplishing something no doubt, but certainly achieving no great triumph. But the literature of power, of culture, of inspiration, of manhood—that which tells but for little in his certificate, but alone gives life and potency to all that his certificate does contain—is a field into which the teacher ought to be led with all the steadiness and enthusiasm that organization and fellowship can possibly give.

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THE LATE GEORGE WALLACE, OF WESTON.

SINCE our last issue, one more of the plodding workers in, for the most part, a thankless and wearying profession has fallen by the way, and

few will be more missed by those who knew him and his modest, gentle ways. After a brief illness, George Wallace, Head Master of the Weston High School, died at Weston on the 24th ult., and his death has created widespread sympathy for his bereaved relatives, by whom, as well as by many friends, he was greatly beloved. His life, though uneventful, was full of work—work exceedingly well and conscientiously performed, with untiring assiduity and praiseworthy devotion. The profession loses in him a thorough scholar, a painstaking and successful teacher, and a fine type of a modest, amiable and cultivated gentleman. Weston loses a most estimable and much respected citizen, and an upright, good living, honourable man. The successes of the school under his management bear witness to his ability as a teacher, to laudable pride in his work, and to long and unwearied effort in the faithful discharge of duty. Much as he had accomplished, his life was even richer in promise than in achievement; but who can regret that the field of his future work is one where humility never misses its reward and where the honours are abiding? Mr. Wallace, we believe, was a native of Paisley, Scotland, where he received his early education, supplemented afterward by several sessions at the Normal Seminary, Glasgow. Subsequently, he entered Trinity College, Dublin, and there graduated with high honours. In 1875 he came to Canada, and was almost immediately appointed Head Master of the High School, Weston, where he laboured to within a week of his lamented death.

COUNTRY OR CITY TEACHERS.

TEACHING is hard work, and under the most favourable circumstances it is a severe drain upon the vitality and nervous force; but in city schools teaching is (for the lady teacher) carried on under very unfavourable circumstances. In the ordinary public schools of cities, the work, by means of rules and regulations, has become exacting, repressing and harassing: for a faithful teacher, it is worry; for one who through the system has become a mere machine, it means loss of self-respect.

To attempt to make a list of the drawbacks to successful teaching would be a serious task, but we will mention a few of them. Troublesome and unnecessary attendance, and oversight of pupils in the yard and halls are required. Great educators have discovered that instruction must be imparted in such a way as to make it very easy for the children to receive it. The intellectual food must be presented in the most delightful and entertaining manner to the children; they must be "spoon fed," and, therefore, the teacher must spend hours, not in preparing the lesson, but in training herself to present it in some very easy way. Then there is a complete and elaborate system of reports, returns and red-tape, so that the real work of education is lost sight of, and both teacher and pupils run great risk of becoming mere machines. This is not spontaneous, free, inspiring study; it is mechanical routine all through. And why is such an unwise policy pursued in our city schools? Why are the lady teachers in cities rather than in the country subjected to all this? First, because the supply exceeds the demand. The facilities for obtaining professional training in cities are very great. Young girls anxious to assist their parents or become self-supporting, and still remain under the shelter

Ah, gentle spirit, whither hast thou fled?
What doest thou amid the unnumbered
dead?

Oh, say not 'mid the dead, for what hast
thou

Among the dead to do? No! rather now,
If Faith and Hope are not a wild deceit,
The truly living thou hast gone to meet.

of their fathers' houses, prefer teaching in the city, and overlook the advantages which are to be found elsewhere in freer air, and more satisfactory conditions. It is a good thing to be at home, but if that can only be secured at such a sacrifice, it is a better thing

to go where good work can be done. It would be better far if city trustees would select the very best teachers, pay them handsomely, and leave them free under wise regulations to carry out individual methods of instruction.

SCHOOL WORK.

MATHEMATICS.

ARCHIBALD MACMURCHY, M.A., TORONTO,
EDITOR.

PROBLEMS.

Selected and Solved by J. L. Cox, B.A.,
Collingwood Coll. Inst.

39. Find the condition that the equations
 $lx^2 + my^2 + nz^2 = 0$. $ax + by + cz = 0$.
May lead to only one set of values for the
ratio $x : y : z$: and show that if this condi-
tion hold $\frac{lx}{a} = \frac{my}{b} = \frac{nz}{c}$.

$$lx^2 + my^2 + nz^2 = 0 \quad (1)$$

$$ax + by + cz = 0 \quad (2)$$

$$\text{From (1) } z = -\frac{ax + by}{c},$$

$$\therefore \text{ from (2) } lx^2 + my^2 + \frac{n(ax + by)^2}{c^2} = 0.$$

$$(3) \quad x^2(c^2l + a^2n) + 2abnxy + y^2(c^2m + b^2n) = 0$$

Condition for equal roots is,

$$a^2b^2n^2 = (c^2l + a^2n)(c^2m + b^2n)$$

$$c^2lm + a^2mn + b^2ln = 0$$

$$4) \quad \frac{a^2}{l} + \frac{b^2}{m} + \frac{c^2}{n} = 0, \text{ condition required.}$$

Value of $\frac{x}{y}$ from (3), is

$$\frac{abn \pm \sqrt{a^2b^2n^2 - (c^2l + a^2n)(c^2m + b^2n)}}{(c^2l + a^2n)}$$

$$\therefore \text{ if (4) holds } \frac{x}{y} = \frac{-abn}{(c^2l + a^2n)}$$

$$= \frac{-abn}{b^2ln} = \frac{ma}{lb}$$

$$\therefore \frac{lx}{a} = \frac{my}{b} = \frac{nz}{c}.$$

40. Find the coefficient of x^{2n} in the ex-
pansion of $\frac{1}{(1-x)(1+x)^4}$.

$$\frac{1}{(1-x)(1+x)^4} = \frac{(1-x)^3}{(1-x^2)^4}$$

$$= (1-3x+3x^2-x^3)(1-x^2)^{-4}$$

Since all the powers of x in $(1-x^2)^{-4}$ are
even, and $2n$ is even, we may neglect x^3
and x^5 in $(1-x)^3$.

Coefficient of x^{2n} in $(1-x^2)^{-4}$ is the same as
that of y^n in $(1-y)^{-4}$

$$\frac{-4, -5, -6, \dots, (-n-3)}{[n]} (-1)^n$$

$$= \frac{4, 5, 6, \dots, (n+3)}{[n]} = \frac{(n+1)(n+2)(n+3)}{[3]}$$

by writing $n \dots 1$ for n in this we get

$$\frac{n(n+1)(n+2)}{[3]} \text{ for the coefficient of } y^{n-1}$$

\therefore coefficient of x^{2n} required

$$= \frac{(n+1)(n+2)(n+3)}{6} + 3 \cdot \frac{n(n+1)(n+2)}{6}$$

$$= \frac{(n+1)(n+2)(4n+3)}{6}$$

41. Find the continued product of

$$(1+x+x^2)(1+x^3+x^6)\dots(1+x^{n-1}+x^{2^{n-1}})$$

$$1+x+x^2 = \frac{1-x^3}{1-x}; \quad 1+x^3+x^6 = \frac{1-x^9}{1-x^3}$$

etc., etc.

$$1+x^3+x^6 = \frac{1-x^9}{1-x^3}$$

$$\therefore \text{continued product} = \frac{1-x^8}{1-x} \cdot \frac{1-x^9}{1-x^2} \cdot$$

$$\frac{1-x^{27}}{1-x^9} \dots \frac{1-x^n}{1-x^{n-1}}$$

$$= \frac{1-x^n}{1-x} = 1+x+x^2+x^3+x^4+\dots+x^{n-1}$$

42. Solve the equation

$$2x^4 - 4x + 1 = 0$$

$$2(x^4 + 2x^2 + 1) - 4x^2 - 4x - 1 = 0$$

$$2(x^2 + 1)^2 = (2x + 1)^2$$

$$\therefore \sqrt{2}(x^2 + 1) = \pm(2x + 1)$$

$$x^2\sqrt{2} + 2x + (\sqrt{2} - 1) = 0, \text{ taking + sign}$$

$$x = \frac{1 \pm \sqrt{1 - 2 + \sqrt{2}}}{\sqrt{2}} = \frac{1 \pm \sqrt{\sqrt{2} - 1}}{\sqrt{2}}$$

$$\text{or } x^2\sqrt{2} + 2x + (\sqrt{2} + 1) = 0, \text{ taking negative sign}$$

$$x = \frac{-1 \pm \sqrt{1 - 2 - \sqrt{2}}}{\sqrt{2}}$$

$$= \frac{-1 \pm \sqrt{\sqrt{2} + 1}(\sqrt{-1})}{\sqrt{2}}$$

MODERN LANGUAGES.

Editors: { H. I. STRANG, B.A., Goderich.
W. H. FRASER, B.A., Toronto.

EXERCISES IN ENGLISH.

1. Expand the italicized phrases into clauses:—

(a) He is generally the last *to leave the office.*

(b) We need no further evidence *of his sincerity.*

(c) He insisted *on our accompanying him.*

(d) They waited *to hear the result.*

(e) I am quite aware *of its great importance.*

(f) You have done nothing *to be ashamed of.*

(g) She was *too angry to listen to them.*

(h) You would do well *to imitate his example.*

(i) *All danger being over* they returned to their homes.

(j) *Granting all that,* I fail to see the justice of it.

(2) Supply the ellipses in the following:—

(a) He looks better than when I last saw him.

(b) He walked as if he were lame.

(c) I believe he would sooner starve than beg.

(d) What can be easier than to do that?

(e) We are no nearer the solution of it than at first.

(f) What if I did see him do it?

3. Change the voice of the verbs in the following:—

(a) She has disposed of all her tickets.

(b) The opportunity was taken advantage of by the Board.

(c) Nobody will ever find out where he was buried.

(d) The committee look on it as the best plan that has yet been suggested.

(e) If he had not called attention to it probably it would never have been noticed.

(f) The Secretary wrote her yesterday about the matter.

4. Substitute words or phrases of equivalent meaning for the italicized ones:—

(a) The *situation* so long and *ardently desired* had been *abolished.*

(b) He *proceeded* to *execute* the instructions with *alacrity.*

(c) The *maritime supremacy* of England was *imperfected.*

(d) He *endeavoured* to *avert* the *impending calamity.*

(e) An *immense concourse* had *assembled* to *witness* it.

(f) While not *destitute* of *patriotism,* he was *prone* to *malevolence* and apt to be *vindictive.*

5. Break up into a series of simple sentences:—

(a) Many of the crew who had outraged him by their insolence now crouched at his feet, begging pardon for all the trouble they had caused him, and promising the blindest obedience for the future.

(b) Kindling the bark which they had collected, they rushed forward and tried to pile it blazing against the palisade; but so brisk and steady a fire met them that they recoiled and at last gave way, leaving many of their number on the ground, among whom was the chief of the Senecas.

6. Combine each of the following groups

into a paragraph of not more than three sentences :—

(a) The French placed musketry on the tops. Nelson disliked the practice. It endangered setting fire to the sails. Moreover, it was a murderous sort of warfare. Individuals might suffer by it. Now and then a commander might be picked off by it. It could never decide the fate of a general engagement.

(b) A dog had stolen a piece of meat. He had it in his mouth. He was crossing a stream on a plank. He looked into the water. He saw something. It seemed to be another dog. The other dog had another piece of meat. He wanted to get this also. He snapped greedily at it. In consequence he let go his own piece. He lost it in the stream.

7. Divide the following sentences into clauses, and tell the kind and relation of each :—

(a) The largest telescope that has yet been made shows so many stars in every part of the heavens to which it has been directed, that if all could be counted there would be at least one hundred millions.

(b) By using the same instrument that has told us what our sun is made of, we find that each star, like the sun, is a glowing mass of fiery hot matter, shining through the vapours of iron, copper, zinc and other known substances.

8. Analyze, and parse italicized words :—

(a) *Within*, the master's desk *is seen*
Deep scarred by raps official.

(b) *From* my study I see in the lamplight,
Descending the broad hall *stair*,
Grave *Alice*, and *laughing* Allegra,
And Edith with golden hair.

(c) *Into* the halls of marble,
With clubs and with axes *armed*,
Till the *sound* of their shouts and
curses
The courtiers *hearing*, *alarmed*,
Fled in their silks and diamonds,
Leaving the queen *alone*.

9. Write sentences in which the following are correctly used :—affect, laid, set, healthy, attended, with, kind of, compare to, successive, only, reconcile with.

SENTENCES FOR CRITICISM AND CORRECTION.

1. He bounded over the fence, which his pursuers essaying to do failed, and came to grief very badly.

2. Not a cheer was heard, nor scarcely a hat lifted.

3. Having had the misfortune to injure his thumb in the third innings, through his incapacity they lost the game.

4. The undersigned has now in stock over 100 sets, all of our own manufacture.

5. I will pay the above reward to any one who will prove that the above facts are untrue.

6. We will guarantee to do for you fully equal, if not a little better, than any establishment in our surroundings.

7. Every exercise must be certified by the teacher as being the candidate's own work, and should show his progress during at least three months.

8. His frailties, which none of us are without, were of the head, not of the heart.

9. We have nothing to say against written examinations sparingly and judiciously used.

10. No person will deny but what there are acts done by such persons which would be better if left undone.

11. The price is \$4, free by mail, which should accompany the order.

12. The Association invites every one to attend their session and to bring samples of fruit with them.

13. This Balsam will and has saved the lives of thousands attacked by croup, when it has been taken in season.

14. Candidates must be careful only to use such contractions as are generally used, or which cannot be mistaken.

15. Before the officers could reach the house the bird and his brave wife had flown and escaped capture.

16. As we purpose attending personally to our business, and having a thorough practical knowledge of the trade, any person favouring us with their patronage can rest assured that, etc.

17. He should be exercised in quoting passages of special beauty from the select

tions prescribed, and to reproduce the substance of them in his own words.

18. I received the cases yesterday, and am very much pleased with them; but you sent one too many, but I will need it, so I will keep it.

19. I should have written you sooner, but neglected it, but hope I am not too late yet, so hoping I will receive it by your kindness, and you will much oblige yours truly.

20. Whereas, the Committee being so well satisfied with the printing done for them by the T. Printing Company, be it therefore resolved that we tender our thanks to the company for the neatness and taste displayed, and that we not only consider the bills a credit to the T. office, but also to the city.

21. Monday, the 13th July, was duly celebrated by the Orangemen of this district, it being the 195th Anniversary of the Battle of the Boyne, in a manner of no discredit to the organization.

22. About 11 a.m. they had the misfortune of being the recipients of a most drenching shower, which had the tendency to put the damper for a time to our enjoyment.

23. To try to give a synopsis of both the sermons, which were both eloquent and able, would not give justice to him and must be heard to be appreciated.

24. In the evening there could not be less than 700, as the aisles were completely packed—not even standing-room—and several had to go away for want of standing-room.

25. The pastor occupied the chair in his usual happy style, and opened the meeting by prayer, and after a few words congratulatory to those present, and the great pleasure he felt from the general appearance all around him, felt thankful to the head of the Church for the harmony and unity which still prevails.

CLASSICS.

G. H. ROBINSON, M.A., TORONTO, EDITOR.

EX. 23—BRADLEY'S ARNOLD.

A.

Illud jamdiu scire cupio, cur adeo pertimescas ne tui obliviscantur cives. Tu, quid de hac re censeret et ego et pater meus jamdudum cognoscere cupiebamus. Massiliam quum veneris, velim fratrem tuum roges cur nullas ab eo acceperim literas. Dixi judices, et consedi, id quod ipsi videtis vos jam de hac re judicate. Spero equidem et jampridem spero, hunc hominem vestris omnium sententiis absolutum iri. Medi dum hæc parant, Graeci jam ad Isthmum convenerant. Pater tuus ad extremam senectutem quotidie aliquid discobat. Hostes quoties infelicissimæ hujus gentis oppidum expugnaverant, nulli parcebant; trucidabantur mulieres, pueri, senes, infantes, nullo vel ætatis vel sexus facto discrimine.

B.

Eum qui primus murum conscenderit corona se aurea donaturum pollicetur. Tibi cum Roma rediero, cur te arcessiverim dicam. Jamdiu negabant Galli se vel legatis nostris obviam ituros, vel conditiones quas Cæsar ferebat, accepturos. Constitere subito hostes; sed illi dum tempus terunt, nostri clamorem tollere, in mediam peditum aciem impetum facere. Videbat jamdiu imperator ab hostium multitudine premi suos, qui coniectis jaculis, glandibus, sagittis, nostros de colle deturbare conabantur. Dixi, judices; vos cum sententiam dixeritis, manifestum erit utrum iste impune domum rediturus sit, an tot scelerum pœnas daturus.

EXERCISE 24.

Hujus tanti philosophi præceptis jampridem nos obtemperare oportuit. Nonne salutem tuam, utilitates tuas, reipublicæ salutem posthabere debuisti? Victis et ignavis servire licet; qui patriam in libertatam vindicant, eis necesse est liberis esse. Pudet me tibi persuasisse ut pulcherrimo hoc incepto desisteres. Amicos tuos ac propinquos per me tibi monere licuit, ne in tantum periculum

ac perniciam præcipites incurrerent. Ejusmodi domino non potuit fieri ut civis Romanus parere vellet. Quid facerent hostes, videre potuisti; sed haud scio an improvidus esse ac cæcus malueris. Hoc te facere oportuit; licuit tibi pugnanti in acie perire; et mori potuis debuisti quam utilitatibus tuis rempublicam post habere. Nonne senem te pudet, ut inimicissimis tuis placeres, amicis de fuisse patriam prodidisse? Noli timere; Romam tibi venire quoties libebit, per me licebit; quo quum veneris, fac apud me, si poteris, commorere.

SCIENCE.

H. B. SPOTTON, M.A., Editor, *Barrie*.

LOUIS PASTEUR.

The interest in the work of the great French philosopher, Louis Pasteur, has been excited anew by the announcement of another scientific triumph—the discovery of the true nature and the means of preventing the fearful disease known as hydrophobia. The discoveries of Pasteur have revolutionized medical science. His name is inseparably associated with the germ-theory of disease—a theory which ascribes the phenomena attending fevers and other epidemic disorders to the presence and multiplication of microscopic parasites.

His earlier studies were devoted to unravelling the mysteries of fermentation. He proved conclusively that substances which had commonly been regarded as ferments were in reality only the *food* of minute organisms, the latter being themselves the real ferments. He showed that as these increase and multiply they abstract the oxygen they require for growth from the medium in which they exist, and so change the chemical nature of the substance. This chemical change so caused is fermentation. Of a similar nature, also, is putrefaction. Having grasped the true nature of these phenomena, he immediately turned his knowledge to practical account by overcoming and removing what had hitherto been insurmountable difficulties in certain great manufacturing industries, notably those of wine and silk. The wine difficulties were traced each to its own

special organism, and it was found that the organisms could be destroyed by simply heating the wine. The silkworm disease, in like manner, was traced to the presence of a microscopic organism, and it was shown that the disease could be communicated to healthy worms by association with those in which the parasite was at work. The outcome of his investigations was the complete removal of an evil which threatened to annihilate the silk industry of France, by simply separating healthy from unhealthy moths, and using only the eggs of the former for the production of worms.

The bearing of these discoveries upon the germ-theory of disease is obvious. Before Pasteur entered upon this great field (which we are told he did with reluctance, not being himself a physician,) other observers had suspected certain fevers to be due to microscopic parasites which had been found in the blood of patients. Pasteur's investigations confirmed these suspicions. Having established the nature of the disease, the next step was to find a method of preventing it, and the solution of this problem places Pasteur in the very highest rank of investigators. He discovered the secret of the virtue of vaccination, using this term in its widest sense. On this point we quote the words of Professor Tyndall:—"When a tree, or a bundle of wheat or barley straw is burned, a certain amount of mineral matter remains in the ashes—extremely small in comparison with the bulk of the tree, or of the straw, but absolutely essential to its growth. In a soil lacking, or exhausted of, the necessary mineral constituents, the tree cannot live, the crop cannot grow. Now, contagia are living things, which demand certain elements of life just as inexorably as trees, or wheat, or barley; and it is not difficult to see that a crop of a given parasite may so far use up a constituent existing in small quantities in the body, but essential to the growth of the parasite, as to render the body unfit for the production of a second crop. The soil is exhausted, and until the lost constituent is restored, the body is protected from any further attack of the same disorder. Such an explanation of non-recurrent diseases natur-

ally presents itself to a thorough believer in the germ-theory, and such was the solution which, in reply to a question, I ventured to offer nearly fifteen years ago to an eminent London physician. To exhaust a soil, however, a parasite less vigorous and destructive than the really virulent one may suffice; and if, after having by means of a feebler organism exhausted the soil without fatal result, the most highly virulent parasite be introduced into the system it will prove powerless. This, in the language of the germ-theory, is the whole secret of vaccination."

Pasteur weakened the virus of splenic fever by exposing it to air, and transmitting it through the bodies of various animals. With this "attenuated" virus he vaccinated a number of animals, and, some days after, inoculated these and a number of others with virus which had not been "attenuated." The result was that the vaccinated animals escaped completely, whilst the others were all dead in three days.

The parasite to which hydrophobia is due has now at length been isolated, and, pursuing similar methods, Pasteur has attenuated this virus also, and has already been the means of saving many lives. Patients are being sent to him at Paris from various parts of the world, and doubtless before long facilities for applying his methods will be furnished at convenient centres throughout the civilized world.

THE CLASS-ROOM.

DAVID BOYLE, Editor, Toronto.

ARITHMETICAL PROBLEMS.

By Leo. B. Davidson, Head Master, Public School, Sault Ste. Marie.

1. (a) There are two numbers whose sum is 75 and difference 15. Find their product.

(b) Find the smallest number exactly divisible by 6, which added to 3570 makes the sum exactly divisible by 14.

Ans. (a) 1400. (b) 42.

2. A man's salary is \$725. He spends each week \$4.25. How long will it take

him to save enough to buy 49392 lbs. flour worth \$8 per bbl.

Ans. 4 yrs.

3. A cabinetmaker in 4 years manufactures 5650 chairs, making each successive year 75 chairs more than in the preceding year. Suppose he sells the chairs at \$9 per doz., find the proceeds for his labour during the third year.

Ans. \$1087.50.

4. A farmer has just money enough to buy sheep at \$7 each, pigs at \$8 each, calves at \$14 each, or cows at \$26 each, and still have \$6 in cash. Were he to lose the value of a calf, how many pigs could he buy with what he would have left.

Ans. 90.

5. A tree 195 feet high, in falling broke into three pieces. $\frac{1}{5}$ of the shortest piece was equal in length to $\frac{1}{2}$ of the second piece, and $\frac{1}{3}$ of the longest piece was equal to $\frac{1}{4}$ of the second piece. Find the length of the second piece.

Ans. 70 ft.

6. A lot is 165 feet long and 143 feet wide. Find the least possible cost at which a man can fence it with boards of a uniform length at 12½c. each, and posts at 10c. each, allowing the fence to be 5 boards high and an extra post in the centre of every panel.

Ans. \$46 20.

7. (a) Give rules and illustrate by examples the methods of reducing circulating decimals to vulgar fractions.

(b) Find, without reducing to vulgar fractions, the value of $\cdot 56\bar{3} + \cdot 40\bar{57}$.

Ans. $\cdot 9693211\bar{3}$.

8. Six months after date I promise to pay Messrs. Henry & Co. the sum of \$520 with interest at 8%.

JNO. THOMAS.

What sum will discharge this note immediately?

Ans. \$500.

9. The surface of a cistern measures 10 ft. 6 in. by 12 ft. If, when the cistern is half full of water, a rectangular stone 3 ft. 6 in. long, 3 ft. wide and 18 in. thick be dropped into it, find how much the water will rise.

Ans. 1½ in.

10. Suppose water expands $\frac{1}{10}$ in freezing, and that 1 cub. ft. of water weighs 1,000 oz. avoird., find in tons the weight of the ice on a rectangular section of a river 2 miles long and 1½ miles wide, the ice being 6 inches in thickness.

Ans. 990,000 tons.

NOTES ON THE FOURTH BOOK
LESSONS FOR ENTRANCE EX-
AMINATION, JULY, 1886.

THE CAPTURE OF QUEBEC.

French dominion in Canada may be said to have begun in 1541, when the first viceroy, Roberval, was sent out.

The plan. Whose was the plan?

A broad open plain. The Plains of Abraham, lying to the west of Quebec.

Magnificent stronghold. In regard to the strength of its natural defence, Quebec is said to be second only to Gibraltar.

Left bank. Which is the "left bank"?

Plans kept secret. Why?

Flotilla. A fleet composed of small vessels.

Ebb tide. The retiring tide is called the "ebb-tide," while the rising is called "flood-tide."

Not a word was spoken. Why?

Midshipman. The lowest rank of an officer in the navy.

Gray's *Elegy in a Country Churchyard* had just been published.

Qui vive. Who goes there?

Ready self-possession. Meaning?

Worsted as a general. Wolfe had outwitted him.

Fight as a soldier. He could still bravely resist, although he had now lost the advantage given him by the natural position of Quebec.

Regular troops. Soldiers of the regular army, well-trained and disciplined.

Reserve their fire. Why were they not to return the "murderous and incessant fire" of the enemy?

Ghastly gaps. Where their comrades had fallen.

Shivering like pennons. Shaking as long streamers would do in the wind.

The restraints of discipline. How had they been restrained before?

Redoubt. A general name for field-works.

Veterans. Old soldiers.

Their gallant general. Who?

St. Charles River. Notice position.

Then the sounds, etc. This line was written by the poet Campbell, and referred to Denmark, after the Battle of the Baltic.

The gallant victor. Who? By what other terms is he described?

One of the most momentous political questions; i.e., whether the French or the English were to rule Canada. The English settled Virginia originally, and the French, Canada.

The New World. The Western Hemisphere. Quebec was taken in 1759; the French Governor-General, De Vandreuil formally surrendered Canada in 1760, and in 1763, the country was ceded to England by the Treaty of Paris.

MARMION AND DOUGLAS.

Surrey's camp. Surrey was the English leader.

Safe-conduct. A pass given him by James IV.

Would. Insisted on.

Let the hawk stoop, his prey is flown. De Wilton, who had been travelling in disguise as a palmer, had ridden away that morning.

Plain. Complain.

Peer. Equal.

My castles are my King's alone. On the principle of the feudal system.

Pitch. Height.

Saint Bride of Bothwell. A favourite saint of the Douglas family, having a shrine at their castle of Bothwell on the Clyde.

Rowels. The little wheels of the spurs.

A letter forged. By means of forged papers, Marmion had greatly injured De Wilton.

Clerkly. Learned.

His mandate; i.e., to give chase to Marmion.

LINDSAY PUBLIC SCHOOL.

DECEMBER, 1885.

—
DICTATION.

—
Fourth Class Junior.

During his march to conquer the world, Alexander, the Macedonian, came to a people in Africa, who dwelt in a remote and secluded corner, in peaceful huts, and knew neither war nor conqueror.

Riding round this circle at a distance, to survey it, he saw a brave figure on horse-back, in a blue mantle and a bright helmet, whose horse suddenly stumbled and threw him.

Some proposals for reconciliation were made, but were soon abandoned.

He had gone only a short distance, when he overtook a man of grave and sedate appearance, who was trudging at a moderate pace along the road.

ARITHMETIC.

1. A room is 35 ft. long and 21 ft. wide. Find the difference in cost between carpeting it with carpet 21 inches wide at $87\frac{1}{2}$ cents a yard, and with carpet 35 inches wide at \$1.25 a yard.

2. Four men hired a pasture for \$45. A put in 5 cows for 6 weeks, B 4 cows for seven weeks, C 3 cows for 8 weeks, and D 2 cows for 9 weeks. How much should each pay of the \$45?

3. A owns seven-seventeenths of a potato plot, and B the remainder. When the potatoes were dug it is found that one-third of the difference between their shares is $42\frac{3}{4}$ bus. Find how many bushels belong to B.

4. A man buys a block of land $1\frac{1}{4}$ miles square, and sells one square mile. How many acres does he keep?

5. If one-half be added to a certain number the sum will be 270. What is the number?

6. Find the cost of
 1460 feet of lumber at \$11 per M.
 $17\frac{1}{2}$ cords hard wood at \$4.50 per cord.
 $8\frac{1}{4}$ " cedar at \$2.25 per cord.
 7 tons coal at \$6.55 per ton.

GRAMMAR AND COMPOSITION.

1. Analyze :—“ Harold broke up the feast and hurried to London.”

2. Parse :—“ The victorious army marched to York.”

3. Combine into one sentence :—
 William Cowper was a poet.
 He was born at Huntingdon.
 Huntingdon is in England.
 He was born in 1731.

He was subject to fits of melancholy.

He wrote “ John Gilpin.”

He wrote “ The Task.”

He died in 1800.

4. Write a short account of a sleigh-ride.
 5. Write sentences containing :—
 (a) An adverb modifying a verb.
 (b) An adverb modifying a adjective.
 (c) An adverb modifying another adverb.
 (d) An adjective in the superlative degree.
 (e) A proper adjective.

GEOGRAPHY.

1. Give two proofs that the earth is round.
 2. Define great circle, latitude, delta, equator, tributary.

3. Into what waters do the following rivers flow? Amoor, Arkansas, Colorado, Indus, Nile, Orinoco, Trent, Vistula, Volga, Zambesi.

4. What and where are Alberta, Ashantee, Baton Rouge, Hatteras, Honduras, Martha's Vineyard, Muscat, Nottawasaga, Oregon, Servia.

5. Name and locate the highest mountain in Europe, in Asia and in America.

6. Draw a map of North America, showing the countries and chief rivers.

LITERATURE AND HISTORY.

Readers may be used.

Questions 1 and 2 are not both to be taken.
 Jacques Cartier at Hochelaga.—Page 93.
 Old Reader.

1. Define pinnace, harbour, gallant crews, shallowness of the water, volunteers, metropolis.

The Battle of Hastings.—Page 37, New Reader.

2. Define ambassadors, helmet, wrecked, divers-coloured sails, gilded vanes, retreat.

3. What nations lived in England previous to the Norman conquest? About what time is each met with?

4. What were the Crusades? What English kings engaged in them?

5. What were the Wars of the Roses? Why so called? When did they begin and end? What was the result?

6. What kings were called by the following surnames respectively:—Beauclerc, Bolingbroke, Cœur de Lion, Confessor, Conqueror, Great, Ironside, Longshanks, Rufus. Unready?

EDUCATION DEPARTMENT,
ONTARIO.

DECEMBER EXAMINATIONS, 1885.

High School Entrance.

ARITHMETIC.

Examiner—John Seath, B.A.

COMPOSITION—3RD TO 4TH.

Time, 2 hours.

Limit of work.—Capitals, continued; punctuation marks:—, ; . ? ! “ ” Compositions based on object lessons, pictures, local events, relation of stories, subject-matter of reading lessons. Familiar letter-writing. Simple business forms such as accounts and receipts. Exercises to train in the correct uses of apostrophes, and of common words and phrases that are liable to be misused, such as: older and elder, healthy and wholesome, “there is” and “there are.”

1. Put the following into a properly constructed letter written to Harry Gill, Bracebridge, Muskoka; punctuate and put in the capital letters:

(put in your own Post office here) 18th november 1885 my dear harry i send you by to-days mail a copy of the youths companion containing a story called the raccoon hunt i thought you would enjoy reading it because it is so like your 'coon hunt which you told me about in the holidays i am writing on the examination for promotion to the fourth class if i pass father has promised me a new hand sleigh your affectionate friend walter black. [32.]

Of the 32 marks 12 are for correct arrangement of date, introductory, margin, paragraphing, subscription. Count 1 off for every error in capitals; 2 for every error in division into sentences and paragraphs; 1 for every error in punctuation, and two for every misspelled word.

2. What is the difference in meaning between:

(a) “That is a picture of my father” and “That is a picture of my father’s.” [6.]

(b) Be open evermore,
O thou my door!
To none be shut—
To honest or to poor

and

Be open evermore,
O thou my door!
To none—be shut
To honest or to poor. [8.]

3 Correct the language of the following sentences:

(a) I have come for the lend of a gridiron [3.]

(b) Who learned you to make 8 that way? [3.]

(c) He has two good recommends. [3.]

(d) Chewing tobacco is an awful dirty habit. [3.]

4. Combine the following statements into one sentence:

The Baltimore oriole weaves its nest.

It makes its nest pouch-shaped.

It weaves its nest of bark, fine grass, moss and wool

It strengthens its nest with pieces of string or horse hair.

It fastens its nest to the slender branch of a tree.

It generally fastens its nest to the branch of a willow tree. [15.]

5. Write a short composition on Thanksgiving Day. Tell its date this year. Why it is observed. How you spent it.

Write at least eight lines.

Deduct marks for errors in capitals, punctuation, etc., as in No 1. [20.]

6. Write the following sentence substituting equivalent words or phrases for italicized ones. Underline each substitution you make:

“These furry little *quadrupeds* can stay a long time under water swimming *swiftly* and *without noise*, so that the fish which they follow seldom escape them. [11, i.e., 1½ marks for each]

(Count 100 marks a full paper.)

A proper value out of 25 marks will be allowed for the writing, neatness, and general style of this paper.

Examiner—J. E. Hodgson, M.A.

NOTE.—A maximum of five marks may be added for neatness.

1. Define the following terms:—Factor, Prime Number, Multiplication. Write down all the Prime Factors of 2,310. [12.]

2. (a) Reduce to simplest form: $\frac{9534}{15663}$.

(b) What is the least number from which 1,224 and 1,656 may each be taken an exact number of times? [6+8=14.]

3. A man who lost $\frac{1}{3}$ of his fortune in one year, and $\frac{1}{4}$ of the remainder the next year, had \$900 left. Find the amount of his fortune at first. [11.]

4. What quantity taken from 159 $\frac{1}{2}$ will make it exactly divisible by 12 $\frac{1}{2}$? [10.]

5. Express 374976 minutes as the decimal of a week. [10.]

6. What will 11,750 feet of lumber cost at \$27.50 per thousand? [9.]

7. Name the units of length, time, and sterling money. [6.]

8. Find the simple interest on \$800 for 3 years at 5 $\frac{1}{2}$ per cent. [11.]

9. A cistern has three pipes; the first will fill it in ten hours, the second in twelve hours, and the third in fifteen hours. In what time will they together fill the cistern? [17.]

COMPOSITION.

NOTE.—A maximum of five marks may be added to the total value for neatness.

1. Combine the following elements so as to form a complex sentence:—

The Strait of Gibraltar leads into the Mediterranean. The Mediterranean is a series of inland seas. These seas wash the coast of Italy. These seas wash the coast of Africa. These seas wash the coast of Syria. These seas wash the coast of Egypt. [16.]

2. Explain what is meant by the terms *direct* and *indirect* as applied to the form of speech. Give an example of each. [12.]

3. Express in words of your selection and arrangement the meaning of the following:—

(a) The boats plied busily; company after company was quickly landed, and as soon as

the men touched the shore they swarmed up the steep ascent with alacrity.

(b) Vice is a monster of so frightful mien, As, to be hated, needs but to be seen, Yet seen too oft, familiar with her face, We first endure, then pity, then embrace. [26.]

4. Correct the following:—

(a) What was the future of these two boys?

(b) He ascended up the hill.

(c) He pulled the plant up by the roots.

(d) The whole town may be seen sailing up the river.

(e) Can we suppose that good blood replaces teaching?

(f) The two boys divide the work among themselves.

(g) His faithfulness and fidelity are unequalled. [14.]

5. Write a letter to a friend, describing your school-ground's and class-rooms. [18.]

6. Expand the following into a paragraph:—

The Hundred-Years'-War had ended, not only in the loss of the temporary conquests made since the time of Edward the Third, with the exception of Calais, but in the loss of the great southern province which had remained in English hands ever since the marriage of the duchess, Eleanor, to Henry the Second, and in the building up of France into a far greater power than it had ever been before. [14.]

GEOGRAPHY.

NOTE.—A maximum of five marks may be added to the total value for neatness.

1. Define:—latitude, longitude, oasis, delta. [8.]

2. Name the provinces and the territories of Canada. [10.]

3. What counties of Ontario border on Lake Ontario? [9.]

4. Name the principal seaports of Canada. 7.]

5. Trace the following rivers:—Mississippi, Danube, Nile. [9.]

6. Draw an outline map of Africa and indicate thereon the position of:—Algiers, Cairo, Natal, Cape Bon, Victoria Nyanza, Orange River. [10.]

7. What and where are the following :— Labrador, Three Rivers, Portland, Selkirk, Cuba, Panama, Heligoland, Maelstrom, Vesuvius, Cyprus, Malta, Ceylon, Formosa, Transvaal, Fezzan, Niger? [12.]

8. (a) What portions of Canada are noted for any of the following products:—Wheat, apples, peaches, pine, coal, iron, salt, gold, copper?

(b) What commodities do we obtain from the following countries:—Japan, Barbadoes, Spain, Brazil? [10.]

ORTHOGRAPHY AND ORTHOEPY.

NOTE.—Twenty-five of the fifty minutes allowed for this subject are to be allotted to A, which is to be read to the candidates three times—the first time to enable them to collect the sense; the second time, to enable them to write down the words; and the third for review. At the end of the twenty-five minutes, the presiding examiner will distribute B among the candidates, who will, after writing their answers, fold them and hand them in with their work under A. Two marks are to be deducted for each mistake in spelling, and one for each mistake in pronunciation.

A.

The fine English cavalry then advanced to support their archers, and to attack the Scottish line. But coming over the ground

which was dug full of pits, the horses fell into these holes, and the riders lay tumbling about, without any means of defence, and unable to rise from the weight of their armour.

The bracing keenness of the mountain air, while it invigorates, lends lightness and buoyancy to the steps in ascending the steep ascent.

European, oblique, complete, seize, vacancy, retrieve, legible, cautious, jealousy, curable, leisure, Wednesday, February, initial, falsify, similarly.

B.

Indicate fully the pronunciation of the following words:—Towards, campaign, incomparable, baptist, barrel, auxiliary, anticipate, aisle, indict, indisputable, inhospitable, forecastle, ewe, choir, toll, humour.

Accentuate the italicized words in the following:—

The *convict* was sentenced to twenty lashes.

The *imports* exceed the *exports*.

James was a *gallant* in his manners.

The lawyer entered a *protest*.

The *conflict* continued three days.

The *refuse* was removed during the night.

CONTEMPORARY LITERATURE.

SCHOOL MANAGEMENT. Fifth edition. By Amos M. Kellogg, Editor of the *School Journal and Teachers' Institute*. Price 75 cents.

Valuable advice and many useful suggestions to teachers are found in this modest volume.

OUTLINES OF PSYCHOLOGY. By James Sully, A.M. Syracuse: C. W. Baedeen, 1886. Price \$1.50.

Mr. Sully's work is now regarded as the standard authority on the subject of the application of the Principles of Psychology to Education, and we hope that it will be widely read by Canadian teachers. Our readers will remember that it is one of the text-books prescribed for the First-Class

Professional Examination. Dr. Reinhardt, editor of the present edition, has performed his work with skill and judgment.

EASY LESSONS IN GERMAN. An introduction to the Cumulative Method. By Adolphe Dreyssing. New York: D. Appleton & Co., 1886. pp. 103.

This is an elementary series of practical exercises intended to serve as an introduction to the "Cumulative Method" already noticed in these columns. It is in fact a simplification and abridgment of that work, while it combines some features of the "Verb-Drill" reviewed in the December CANADA EDUCATIONAL MONTHLY. The book has abundant illustrations representing

the objects spoken of in the lessons, which, it should be said, are mainly in dialogue form. Presupposing a teacher with the requisite enthusiasm, added to fluent powers of expression, we do not doubt that these lessons might be very useful to beginners with plenty of time.

THE TEMPERANCE TEACHINGS OF SCIENCE.
By Dr. Palmer, Professor of Pathology, etc., in the University of Michigan.
Boston: D. C. Heath & Co., 1886.

We are in sympathy with the object of this book, which is, to state in a fair and scientific manner the *facts* in regard to the action of Alcohol upon those who indulge in it. It is specially adapted for the use of public school teachers.

"COLLEGE SONGS" AND "KINDERGARTEN CHIMES." Boston: Oliver Ditson & Co.

"College Songs" (mailed free for 50 cents) is sure to become popular among musical students. Many old favourites and a large number of new songs are found in this collection. As usual in students' songs, the music is greatly superior to the words. All the solos have piano accompaniments.

"Kindergarten Chimes" is a pleasing collection of songs for little children, including some very good action songs.

THE SCHOOL-ROOM CHORUS. By E. V. DeGraff. Syracuse: C. W. Bardeen, 1886.

The publishers announce this as the seventieth edition of the "Chorus." It contains some two hundred familiar rhymes and songs set to music.

OUTLINES OF MÆDIÆVAL AND MODERN HISTORY. By President Myers, of Belmont College, Ohio. Boston: Ginn & Co., 1886.

In some seven hundred pages the author presents a view of this wide subject adapted to the requirements of students attending colleges and normal schools. We have examined the "Outlines" with great pleasure, and feel safe in recommending it to teachers and students as a convenient and instructive book of reference. It is beautifully printed and bound, and contains some fine historical maps.

HISTORY OF ENGLAND. Part I. From the Earliest Times to the Death of Henry VII. By F. York Powell, Senior Student of Christ Church, Oxford. London: Rivingtons.

Among the many historical works issued in 1885 this bore no unimportant place. It is specially designed for private students preparing for university work, and for the middle and upper forms of the great public schools. One good feature is the frequent mention of dramatic and pathetic incidents which impart animation and colour to the narrative. The present is a new and revised edition.

A BIOGRAPHICAL HISTORY OF ENGLISH LITERATURE. Dr. Morell's English Series. London and Edinburgh: W. & R. Chambers.

After a careful examination, we heartily commend this book to our readers as the best work of its kind in this important subject. It is a volume of some 500 pp., containing three hundred well-chosen exercises, intended as an aid to the work of examining and gaining a true appreciation of the style of the greatest English writers. It contains also a life of each author, a list of his works, contemporaries, etc. etc. This information is conveyed in a clear and pleasant manner. We regard it as a most valuable work, and hope that it will be largely introduced in this country.

THE BUTTERFLIES OF THE EASTERN UNITED STATES. By Prof. French of the Southern Illinois Normal University, Philadelphia: J. B. Lippincott Co., 1886.

The author's object is to furnish a complete description of the species found in that part of the United States, clearly indicated by his zoo-geographical map. The volume embraces most interesting chapters on the life of the butterfly, the best methods of capturing and preserving specimens, and many other points, which will be duly appreciated by students and collectors. Numerous illustrations add to the value of a book which the zoological student and the boy with a passion for butterflies will count among their treasures.

FIRST YEAR OF SCIENTIFIC KNOWLEDGE, by Paul Bert, Ex-Minister of Education in France, Member of the French Institute, etc. Relfe Brothers, 9 Charterhouse Buildings, London, England.

The original edition of this little volume has had a circulation of 500,000 in France, and it needs but a cursory glance through its pages to account for this remarkable fact. The variety of its contents, its accuracy, its suitability to the capacity of children, its interesting style, the copiousness and correctness of its illustrations make it one of the most remarkable books of this age. Of the five hundred and fifty illustrations there are very few which fail of their purpose in elucidating the text. The contents comprise easy lessons written in a conversational style on animals, plants, stones and soils, physics, chemistry, animal physiology and vegetable physiology. These lessons contain the latest and most trustworthy information upon the leading facts of their respective subjects. One of the excuses for the culpable neglect of scientific teaching in our public schools has been the want of a suitable text-book. With this volume of M. Bert's available this excuse can no longer be made. There is just sufficient information on each subject to tempt the intelligent teacher to enlarge upon it, while it gives the pupil clear and comprehensive ideas as a basis for further knowledge. Though got up in the plainest style, we know of no book which we could more highly recommend as a present to an intelligent boy or girl.

PRINCIPAL MCKAY, of Pictou Academy, and other Nova Scotia educators are paying attention to spelling reform.

"EDUCATION," formerly published bi-monthly, has now become a monthly, and will be edited and published by Mr. Mowry, lately an editor of the *N. E. Journal of Education*. The first issue under the new management is a good one.

THE MONTHLY cordially welcomes the *Academy*, a new journal of secondary education, issued under the auspices of the Associated Academic Principals of the State of New York. Mr. Bacon, of Syracuse, is editor and publisher.

THE place of honour in *Harper's Magazine* for March is occupied by "An Iron City beside the Ruhr," being a deeply interesting account of the Krupp Works at Essen. Five other important articles, including one on "Cape Breton Folk," a powerful short story by Brander Matthews, serials, poetry, the editorial departments, and many illustrations, make up a fine number.

THE "Angry Bear Crossing a Railway Track," on the cover of the *Overland Monthly*, presides over a varied and attractive table of contents, in which the first three numbers are significant articles on the Chinese Question.

THE March *Atlantic* contains a number of able reviews, instalments of serials by Miss Murfree and Mr. James, pleasant pages from Dr. Holmes', pen and one more article on Gen. Grant.

"SHAKESPEARIANA" for January is a highly satisfactory number. Among other articles we may be permitted to mention that on Dr. Samuel Johnston, by J. Parker Norris.

THE March *Wide Awake* is an excellent number; the stories are amusing and good enough to be true, while the other department have been carefully prepared for the young people, for whom the magazine is intended.

It gives the MONTHLY great pleasure to note the increase in the circulation of the *English Illustrated Magazine*, of which the February number is early to hand, and contains among other things a capital short story by Grant Allen, an article on "Lifeboats and Lifeboat-Men," by C. J. Staniland, also one on "A Month in Sicily" by H. D. Trail, and a number of fine illustrations. In this magazine are to be found articles which appeal strongly to the home feeling of British people, and the cultivated taste of the scholar.

RECEIVED.--An Outline Map of the United States, D. C. Heath & Co. The Diacritical Speller and An Aid to English Grammar, C. W. Bardeen. The Practical Teacher, Vol. viii., Kellogg & Co. Cassell's National Library, edited by Prof. Henry Morley. No. 1, My Ten Years' Imprisonment. No. 2, Childe Harold's Pilgrimage. No. 3, Benjamin Franklin. No. 4, The Complete Angler. Issued weekly. Annual subscription, \$5. Single Nos., 10 cents.