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OUR WORK AND HOW TO DO IT.

BY REV. PROFESSOR WILLIAM CLARK, M.A., TRINITY COLLEGE, TORONTO.

(Continued from page 124.)

IN childhood our first thought, apart from our own gratification, is to please our parents, our friends, our neighbours. It is a motive which is in itself excellent and commendable, and which never entirely leaves the better kind of men and women. We meet with this thought in most workers; and it is embalmed in the writings of the greatest of men. It speaks in touching language in the preface to the great dictionary of Johnson. "I may surely," he says, "be contented without the praise of perfection, which, if I could obtain, in this gloom of solitude what would it avail me? I have protracted my work till most of those whom I wished to please have sunk into the grave, and success and miscarriage are empty sounds."

In youth we are possessed by the spirit of emulation, and it would be wrong to discourage this sentiment altogether; but it is one which does not live with the best men. "As we grow older," it has been well said, and

the speaker* might have added, as we grow wiser, "we care less to surpass others, and more to do our own work well." The man who cannot understand words like these can hardly have appreciated the dignity and responsibility of work. What can afford a truer or keener pleasure to the earnest workman than to see his work taking shape under his observant eye, under his careful and laborious hand? What, save the satisfaction which he experiences when he finds that he has not wholly failed in his attempt, that he has come somewhat near to the ideal which he placed before him when he took his work in hand? And if the thought of good work be an incitement and the sight of it a joy to the worker, it is hardly less a *delight to all who behold it*. "A thing of beauty is a joy forever," said Keats, and the words are emphatically true of a thing of beauty which is the re-

* Lord Derby at Edinburgh.

sult of human labour. The sculptures of ancient Greece are to this day, and will be through all ages, the delight of the world and models for the artist. The pictures of Italy of the renaissance grow more precious day by day, as their transcendent beauty is more fully and widely recognized. But it is not merely with works of high art that the sentiment is associated. The tools which we use every day in the ordinary occupations of life, the objects which lie around us in our homes, are sources of constant annoyance or satisfaction to us. The makers and framers, known or unknown, are earning our gratitude or our censure, it may be long after their work on earth is finished. And if the work itself affords so much pleasure to others, no less does the doing of it delight and gratify the beholder. Who does not know the different emotions awakened by the sight of the bungler or the skilled workman at his task? And this difference enters into every department of human employment. Men stand aside when they are in the presence of a master mind: they instinctively surrender their tools into a master-hand. Who would venture to bend the bow of Achilles in presence of its owner? Who would have dared to sweep the strings without trembling if Paganini had been looking on? It is told of a certain body of commissioners in England who have discharged most important functions in that country, that they never thought of beginning their work, they only sat nibbling their pens, until a certain member of their body arrived. They felt that they were as likely to go wrong as to go right in his absence, that anything which they did before he arrived might have to be revised or undone when he came.

This part is strikingly illustrated by a story which is told of the two great commanders in the French war of the

Fronde. Turenne, the greatest soldier of his time, was at the head of the royal army; Condé, second to Turenne alone, had for some time been absent from the rebel army, which at that time he commanded. After a brief suspension of hostilities the rebels changed their position and made an attack upon the king's forces. When Turenne remarked the manner of the enemy's advance he exclaimed, "Ah, Condé is there!" There was no mistaking the master's hand in the movement of the troops. Least of all could it be hidden from one who was himself a master of that art.

3. Duly considered, the doing of one's work well—as well as it is in our power to do it—will probably be regarded by most men as at once a duty and a glory. But it is too often forgotten that such excellence is hardly ever attained without an amount of arduous, careful, earnest work which most men are unwilling to go through, in order to reach such a result. By this it is not intended to be asserted that good work cannot be done with ease. The best work is often accomplished with the greatest apparent ease. But it is so done because the doer of it has spared no pains in learning his art. There are few subjects on which so many or so great mistakes are made as this of the attainment of excellence. Many persons seem to imagine, on the one hand, that skill is merely the result of genius, which has no need of any particular labour or effort to bring it to perfection; and on the other hand, that no amount of labour is of any great use unless the worker is endowed with genius. We do not mean, for a moment, to assert that all men start in life with the same capacities. There are certainly the greatest natural differences between one man and another. Such differences are too conspicuous to need pointing out. But we must still assert, without for-

getting these differences at starting, that no man ever yet attained to excellence and distinction without giving his mind and his heart and his hand, his very best energies, in short, to the work which he had undertaken. Genius itself has been defined as "a transcendent capacity for taking trouble." And there is an unanimous consent as to the necessity of labour in order to excellence, on the part of all the greatest and most successful workers that the world has ever known.

Plato quotes with approval the saying of Hesiod, "The gods have set sweat before virtue." True nobility can be attained, he says, only through toil. Virgil tells that the great Father of agriculture, the Supreme Being, has not willed that the way should be easy for his workmen :

. . . Pater ipse colendi,
Haud facilem esse viam voluit.

Goethe, who is said to have produced the best German prose ever written, testified that no line ever came to him in his sleep ; and no different testimony will be given by any who have ever attained to excellence in any department of human labour.

On the other hand, it is no less true that real earnest toil hardly ever fails to ensure a certain degree of skill and capability in the work upon which it is bestowed. The way is sometimes very long and very weary ; but it is never patiently trodden without leading to some measure of success. History is full of examples of men who have surmounted the greatest difficulties in the way to excellence. The name of Demosthenes occurs to every one at once. He was perhaps the greatest orator that the world has ever seen. Chiefly by reason of this power he became the ruling mind in Athens and in Greece during a great part of his public life. And to this power he attained, in spite of great natural defects, by the sheer force of unweary-

ing toil and indomitable perseverance. But we need not go back to the history of ancient nations for confirmation of our assertions. Every history tells us of the successful pursuit of knowledge under all kinds of difficulties ; and few men need travel beyond the reach of their own experience. When we recall our own school-life, and the knowledge which we have had of our contemporaries in the business of the world, we can hardly fail to recall the names of some men of very slender abilities who, by a conscientious use of such talents as they possessed, have attained to great success and even to high excellence ; and others who in their youth were full of promise, who, by sloth and indifference, have suffered their energies to be frittered away and their native powers to perish.

4. Yes, it is not without labour and toil that men come to great excellence ; and by such means most men may learn to do their work fairly well, if no more can be said. And those who are resolute in their purpose of so working will seldom miss the way of doing so.

We have already pointed out the importance of doing our work, and every part of our work, in the best possible way ; and on this general piece of advice we need say no more, but there are two points of very great importance on which a few concluding words may be said. In the first place, all our work should be done in an *orderly and methodical manner* ; and in the second place, care should be taken *to give attention to the least things as well as to the greatest*.

(1) The *importance of method* is very differently estimated by different men. And certainly it is very much neglected, and neglected to their cost, by a large number of our fellow-men. There are men who seem to have no beginning, middle, or end to their

work. Either they commence without any clear notion of their aim, and in that case they could not possibly have a distinct idea of the route by which they should reach it; or else they have merely made up their minds as to the object which they mean to attain without taking the trouble to consider where they must begin and how they must proceed in order to success. They catch up their work anywhere and anyhow, and go on in any kind of order or disorder. This accounts for a great deal of the loose thinking with which the world is afflicted. It starts from no distinct premises. It conforms to no recognized principles of thought. It is tossed to and fro by its own incoherency. It is filled with contradictions which are mutually destructive, and so it leads to no certain results and produces no settled convictions. It is the same with men's work. It is done with no method, it is carried on with no sort of order, and consequently it is marked by no real progress. It is a simple fact of experience that nothing of any value has ever been accomplished in this manner. What terrible mistakes men make on this subject! Some who are afflicted with the delusion that they are great men, or that some day they must turn out to be great men—certainly one of the most melancholy of all delusions—are often tempted to imagine that want of method, and what seems to them a kind of picturesque disorderliness, are signs of greatness. "It is your little men," so they reason, "who are neat, orderly, methodical: a great mind cannot descend to such trifles." And they are not at all little, and cannot adopt the ways of such. As though the Alexanders, the Cæsars, the Fredericks, the Napoleons, the Wellingtons had thus built up their military genius, had thus gained their splendid victories! Follow the histories of these men and you will see how

ludicrous is such an error. What was the chief part of all the mighty power which they wielded, but the power of order? Did they gain their victories by bringing up cavalry, infantry, artillery at haphazard, by mere dashing bravery, inspiring their men by their transcendent genius. Doubtless a great part of the power of a general lies in his being able to inspire his men with confidence and enthusiasm. But this very confidence is begotten, in no small measure, by the men's assurance that their leader will do the best thing that can be done. They know that he will see at a glance where and when and how to strike, so as to make the best and most effectual use of the means at his disposal. If an order is given to stand fast or to advance, there is in his mind a rigorous necessity for that disposition of his forces. Just as there is one best place for the pawn in the game of chess, that which is prescribed by the law of the game, so in the game of war, or in any other game or work, order is heaven's first law. And the man who cannot make up his mind in respect to master himself, to submit himself to methodical action and work, is declining to take the first step towards success, whatever be the enterprise which he has in hand.

(2) Not remotely connected with this requirement is the second, the necessity of giving *attention to the least things as well as to the greatest*. It is an error akin to that of which we have just spoken, an error too of little minds, to pay attention to things which seem to us great and important, and to neglect or give little heed to those which seem small and insignificant. The error is a very natural one. But it is in all respects most grievous. Illustrations of this point must crowd upon us. The neglect to perfect the smallest part of some intricate machine may throw its work-

ing into disorder and endanger the safety of valuable property, and still more precious human life. An unseen disease invading some obscure portion of the human organism, and allowed to work its way unchecked, has often undermined the constitution and brought on incurable and deadly disease. It is the man who, while holding firmly his central principle of action, yet also masters the details of his work who, as a rule, most surely attains to success. Frederick William the First of Prussia, the father of Frederick the Great, had such a perfect knowledge of his army, its disposition and accoutrements, that it was said he knew where to lay his hand upon the shoe-fastening of every soldier in every regiment. And accordingly when his greater son came to the throne he found ready to his hand an army not unworthy of his military genius. A remarkable example of the importance of small things occurs in the history of this very king. One of the most serious reverses sustained by the great Frederick was at the battle of Kunersdorf, and the principal reason of his defeat was his ignorance of the ground at one particular part of the field. He had trusted to be able to advance a division of his army against a certain point in the enemy's line, but he discovered too late that the ground was impassable. And there is another consideration in connection with this attention to small matters. The man who has not learnt to do little things well, will probably do nothing well. "He who is faithful in that which is very little, is faithful also in much." The man who fulfils the smallest of

duties with conscientious care and zeal, will be likely to do the greatest things with energy and success. And it is by doing well in early days whatever duties may fall to us to be discharged that we gain the knowledge, the ability, the skill to do the greater duties which are then entrusted to us.

Work! it is a great and solemn subject, the employment of man on earth, sometimes pleasant and joyful, sometimes wearisome and painful—the blessed and unceasing employment of the saints in heaven, who rest not day or night—the employment of Almighty God, himself the Maker and upholder of all things visible and invisible. What more powerful impulse can move us to effort than that which is inspired by such considerations? By labour we are proving ourselves to be men, and men in the true sense of our being, imitators of God the great worker, as loving and obedient children. By labour we are advancing ever nearer and nearer to the ideal of our being, drawing in from above and putting forth around us the energies of our regenerated life. By labour we are doing our part towards advancing human civilization, and raising to a higher scale the race which God has destined to reflect his glory. How honourable, how noble, how elevating is such work! May it be said of us that we have "laboured and not fainted," that we have been "good and faithful" servants! May many a one among us leave in the memory of others the conviction that he has been "a workman that needeth not to be ashamed."

MORE things are wrought by prayer
Than the world dreams of. Wherefore let
thy voice
Rise like a fountain for me night and day,
For what are men better than sheep or goats
That nourish a blind life within the brain,

If, knowing God, they lift not hands of prayer
Both for themselves and those who call them
friend?
For so the whole round earth is every way
Bound by gold chains about the feet of God.
—Tennyson.

SOME SUGGESTIVE FACTS ABOUT THE BIBLE.

REV. W. D. ARMSTRONG, M.A., PH.D., OTTAWA.

I PURPOSE to set before the readers of *THE MONTHLY* a few facts with regard to the Bible which separate it from all ordinary literature and justify the pre-eminence we ascribe to it when we call it "God's Word." With the knowledge that I am addressing an intelligent and investigating class of readers I shall deem it sufficient to indicate, without elaborating, my lines of thought.

The attention directed to the Bible in its relation to the school curriculum will, I am sure, be sufficient justification for saying something about the Book itself. Indeed, it would almost justify a thorough elaboration in your pages of Henry Rogers' famous dictum, "The Bible is not such a book as man would have made if he could, or could have made if he would." My object will be to state some remarkable things *about* the Bible, and some remarkable things *in* the Bible which will prove that it cannot be the production of man's intellect but has in it the tracings of the finger of God.

At the outset I will ask the reader to notice a striking peculiarity of the Bible as to its form and origin. It has been called a "Miscellany." It is a collection of sixty-six books, some of them very short, none of them very long. There are histories, biographies, poems, allegories, didactic treatises, familiar letters, prophecies; not written by one man or one class or school of men, but by all sorts of people, kings and priests, statesmen and peasants, philosophers and fishermen; not written in one place, but in many places, in the city, in the country, in the palace, in the prison, by the

rivers of Babylon, in the wilderness of Sinai, from lonely Patmos, from crowded Corinth; not written during one generation or one century, but over a period of at least fifteen centuries. Yet in all this variety there is unity. It is one book consistent throughout. Surely an invisible power during all the ages must have been guiding these various writers.

How to account for this unity in the Bible is a nut very hard to crack for those who reject the doctrine of a special Revelation. Bring the guiding mind of God in and the problem is solved at once. The agency is varied and human, but the Book is God's work. Its variety in unity is like nature—God's work, like man—God's work, like history—God's work.

Again, when we look at this Book and compare it with the other literature of the Hebrew people, it is very singular that a people, whose writings, apart from this, are scarcely worth speaking about, should have embalmed the very life of their nation in such a remarkable series of productions. This fact becomes more wonderful when we consider that more powerful contemporary nations, such as the Assyrians, the Babylonians, the Egyptians had no such records. It is not so long since the literary world was excited over the ingenious interpretation of the Moabite stone. The fire-clay tablets of Assyria and the inscriptions on the tombs of Egyptian kings have but recently, and that dimly, told their story. It is singular that, as a writer strikingly puts it, "The little ark of Jewish literature still floats above the surges of time, while mere fragments of the wrecked archives of the

huge oriental empires, as well as of the lesser kingdoms that surrounded Judea—mere flotsam and jetsam—are now and then cast on our distant shores."

Or again look at the wonderful history of this Book since the volume has been completed. Consider the history and influence of the Book since the time of Christ. Has not its effect upon the intellect and the action of man been marvellous? Volumes might be written upon the character and spirit of the men who by thousands have died for its sake. It would take volumes to describe the way in which men's lives have been swayed by its teachings or how it has compelled the homage of the greatest intellects and still compels it.

It is a remarkable thing about this Book that, having its origin, not among a literary people like the Greeks, but among an unliterary people, it should have proved a well-spring of life to the literature of every land in which it has been welcomed. Can one exaggerate what the German Bible has done for the language and literature of Germany? Or estimate the influence of the English Bible upon English literature? When the missionary visits a Barbarian tribe and translates the Bible into their language he thereby originates a civilization and a literature. The Bible has fulfilled the prophecy concerning the River of Life in Ezekiel's vision, "every thing shall live whither the river cometh."

To see the unique position that the Bible holds among books place it in the midst of the myriad books of Christendom. Let them declare their relation to it, their indebtedness to it. Here are books written to explain it; books written to attack it; books written to defend it; books inspired directly by it; books inspired indirectly by it; books influenced by it

in their diction, elevated by it in their thoughts. Let these all come forth and they will be found to be the very substance of the literature of Christian lands. Then consider the history of the Book occupying this unique position, where it was produced and who wrote it, and you will be compelled to ask for the *something* that gives it its proud pre-eminence.

Another remarkable fact about the Bible is the apparent universal adaptation of the Book to all nations and tribes, to all classes and conditions of men. Eastern books are proverbially local. This Book arose among a narrow-minded people full of local prejudice. Yet it overleaps all local bounds. It is a citizen of the world, truly cosmopolitan, truly catholic. I need state but one fact to show this. It is a singularly suggestive fact. The British and Foreign Bible Society to-day is issuing the Bible, in whole or in part, in 267 different languages and dialects. Take a geographical survey of the world and the significance of this fact will be manifest. How are we to account for the universal character of the Book? Or what shall we say of the attitude of thousands of men and women who are ready to spend and be spent that they may carry this Book to the uttermost parts of the earth? What are we to say of the men that compose this very Society that prints the Bible in so many languages and of the thousands who give their money to sustain the great work? Are they crazy or duped? Not long ago a large company of the ablest and most learned men in the world sat for a number of years with reverent toil seeking to put into English the exact meaning of the Hebrew and Greek phraseology of this Book. Every point and particle was carefully gone over and the meaning of words prayerfully weighed and voted upon. Were these men under a delusion?

Have thousands of the highest and noblest of men been duped into believing that the Book they so revered was special in its origin and had a special value for mankind?

Another remarkable thing about this Book is the fact that it has gone through an ordeal of criticism to which no other book has been subjected. It has always been in the furnace. Yet we can safely say there is not the smell of fire on it. What terrific battles have been fought over it! How fierce the assault of its critical foes! How bitter sometimes the replies of its friends! Surviving both friend and foe, the Book still speeds on its mission bringing its blessing to men in such a marked and generous way that one wonders how any man who loves his fellow-men could be hostile to it, or throw the least impediment in the way of its beneficent progress.

There was in France in the last century a distinguished genius at whose feet the great and the learned bowed with reverence. He was a

foe to the Bible, and predicted that in a hundred years the Bible would be a forgotten book. But Voltaire himself is now almost forgotten whilst the Book he reviled has entered upon an era of unwonted life and vigour, spreading its conquests in every land under heaven.

Such are some of the remarkable things about this Book, its history, its preservation, its influence. Is it not safe to infer that such a book cannot be of human origin merely, but owes its history and its influence to the special interposition of that God who made man and who guides and controls all history?

Although I have stated my arguments only on the merest outline I trust I have carried with me the interest and conviction of my readers. This article is, in a sense, but introductory to another in which I hope to point out some very remarkable things in the Book itself which mark it off from all other books and vindicate for it the right to be held as a book specially from God to man.

STUDY OF ENGLISH LITERATURE.

BY BATE CHALEUR.

"**K**NOW what you have to do and do it," was the answer once received by Ruskin when he asked a celebrated painter how he had secured some gorgeous effects in colour. "What to do and how to do it," were exactly the questions which nearly every teacher of English was asking himself a few years ago, when English literature was added to the programme of studies in our secondary schools. Any genius, good or bad, who would have answered these questions for us, would have been accorded the warmest thanks of grateful hearers. However, no genius vouch-

safed an answer. In our dilemma most of us fell back upon the teaching of the universities, and taught the subject in the way in which it had been taught to us. As time has passed, improvement has been made in both aims and methods. It is becoming fairly well recognized that the main object of the study of English literature is the growth and formation of a strong and symmetrical moral and religious character. This I may say is the object of all education, and the extent to which English literature lends its aid in shaping and strengthening the best elements of

character is at once the measure of its usefulness, and its best justification as a subject of study in either school or college. It is of the utmost importance that we should first know what we have to do. Should we study literature because it is disgraceful not to know something of the lives and works of the great literary men of our country? Should we try to know something *about* literature, or should we strive to get an intimate acquaintance with the thoughts of the best men and women of England, so that knowing their thoughts on many subjects, and pondering them long and well in our hearts they may become a part of every fibre of our being, and may thus refine, elevate, and ennoble our character and life.

I. PROPER AIM.—The proper aim of the highest literature, I take it, is "to crown the true and the good with delight and joy, to clothe the austere form of truth and wisdom with heart-taking beauty and sweetness." This is the very law and life of literature. The realization of this aim must be a very slow process. Its results, among the young especially, are subtle, intangible, impalpable; they cannot be measured accurately in percentages; cannot be recited in class; cannot be talked about; cannot be shown off. Its progress is silent as the dew, but nevertheless powerful as the mighty forces of nature. At first, the young student is almost, if not altogether, unconscious of the enchanting power that is slowly enfolding him in its mighty grasp. Time goes on, and when he does feel its power, he struggles not to release himself. He becomes dimly conscious that he is adding to his soul's wealth.

Who can mistake great thoughts?
They seize upon the mind; arrest and search
And shake it; bow the tall soul as by winds;
Rush over it like rivers over reeds,
Which quaver in the current; turn us cold,
And pale and voiceless; leaving in the brain
A rocking and a ringing—glorious,
And close the soul with Heaven as with a seal.

If I am right in saying that the proper aim of the study of literature is to impart a taste for, if not a knowledge of, what the great and good have thought and written in bygone years; if it be to cultivate big thoughts in ourselves, and to direct our feelings and emotions into proper channels, by making ourselves acquainted with the mighty thoughts of the great souls, who in past ages have been reaching out towards the perfectness of the Infinite, then our second step is pretty clear. It is simply this, how can our object be attained?

II. HOW ATTAIN THE OBJECT.—Before discussing this part of the subject it may first be well to say how I think the object can *not* be attained. Reading biographical sketches of literary men, learning the names of their works; memorizing, parrot-like, criticisms of their books; listening to lectures on the origin and development of literature will never secure the object aimed at. All this may have value as information, but it is not the study of literature; it is second-hand knowledge—most of it—of the most worthless kinds. The aim will never be realized by parsing and analyzing scraps of English classics, nor by using such scraps as convenient pegs on which to hang philological, mythological, geographical and historical disquisitions of great learnedness, but of soul-benumbing tendency. Not by making our classics texts by means of which to study etymology, syntax and prosody, as has long been done in Greek and Latin. These methods, begun and carried on in the name of thoroughness, are false and pernicious. They develop no taste for the grand and noble in literature; but are, on the contrary, most effectual methods of concealing and strangling its very life and soul. Grammar and logic should alike be divorced from literature, except in so far as they rarely contribute to the comprehension of a thought. Nor should

literature ever be studied as an *acquirement*. There is a great temptation to do this, because acquirement in literature can be accurately gauged by percentages; it can be made conspicuous in conversation of the superficial kind; its marks can be made to *tell* at an examination of the wooden kind, and its results tickle immensely the vanity of students who are prodigies and parents who are fools. "Cram, disgorge, forget,"—cram, disgorge, forget, is *not* the way in which to study literature.

How then should it be studied? It matters not whether the aim be to implant a taste for good literature, or to direct students how to acquire a knowledge of it, the process is the same, at least at the outset. We must read the *works* of a man, not *about* them. Just as in science we must come into actual contact with the facts of nature—must see and feel and touch and handle the various objects of study, so must we do in literature. No man ever yet became a botanist by studying a text book or by listening to a course of lectures on the subject. Chemists and geologists are not made by lectures, no matter how eloquent; nor by text books, no matter how perfect the illustrations. No doubt these are both valuable; but chemists are born in laboratories, botanists among grass, trees and flowers, and zoölogists among animals. In the same way a knowledge of literature can be acquired only in the very atmosphere of the subject—by close and careful study of the works of the great masters. It is the thoughts of the great masters we must touch and handle, and these not filtered through hand-book, cyclopædia and history until the life and soul has been lost, but the thoughts pure, warm and unchanged as they left the soul of the author. The form in which the thoughts have been clothed, and the circumstances of his life and times

must, in so far as they originated or affected his thoughts, also be considered; but after all the main thing, at the outset anyway, is to master the thought—is to place ourselves at the point of view of the author.

If I am correct in the position which I have taken, viz.: that literature must be studied, not in magazine articles of criticism, nor in biographical sketches, nor in lectures, able and brilliant though they may be, then our next point must be to decide what departments of literature should be read.

III. WHAT DEPARTMENTS.—If we keep in mind the object of the study of literature, I think we must decide that fiction or story-telling and poetry are the departments which should be studied first and most. History, mental and moral philosophy, politics, mathematics and science have all a literature of their own; but in investigating these departments of human thought a student is not said to be studying literature. These then being the main departments (though I am far from saying that works on history, philosophy and even science do not belong to literature), viz.: poetry and fiction, the next step will be to decide upon the authors whose works should be read. Fortunately our task here will not be difficult. In the opinion of most critics and lovers of literature the names of the great authors stand out so prominently that he who runs may read them.

Arranging them in the order of *time*, although that should certainly not be the order of *study*, I agree in the main with Prof. Meiklejohn, of St. Andrew's University, that the teacher should "probably select *Chaucer* as the type of the chivalric period of English literature; *Spencer* as the richest poet of the Elizabethan era; *Shakespeare* as the greatest dramatist of the period when the drama was at its highest; *Bacon* as the most compact and thoughtful English essayist; *Milton*

as the poet of the Reformation and the master of the most sublime rhythms in the language; *Dryden* as the herald of the new and 'popular' style perfected by *Pope*; *Swift* as the most powerful intellect of his time; *Johnson* as the representative of the massive common-sense of his country, ponderously expressed; *Goldsmith* as the most charming writer of his generation; *Burke* as the most brilliant rhetorician that the modern world has ever seen; *Cowper* as the transition and the link between the age of *Pope* and the nineteenth century; *Wordsworth* as the dawn and bright shining of the noon-day of English literature; while *Byron*, *Scott*, *Tennyson* and *Longfellow* should be studied as representative poets of this century; and *Thackeray*, *Scott*, *Hans Andersen*, and *Charles Kingsley*, as its most enchanting story-tellers.

It is of course quite plain that all the works of these writers cannot be read during any ordinary school and college course. A selection must be made; but here again common repute comes to our aid and maps out the course. I shall not attempt any enumeration of the works which I think should be read, nor of the order in which they should be taken up. These are mere matters of detail and could easily be disposed of. On the latter point, however, I might remark that while the order should, as a general rule, be from the simple story to the more complex forms of literature, age and previous education would be considerations which would largely determine the course as a whole. The actual study might well be begun at ten or eleven years of age, and be carried on systematically throughout the whole of the school and university course. I have no patience with the policy which has supplied the higher forms of our public schools and the lower forms of our secondary schools with literature of the scrap-book char-

acter. A finished whole should be studied, not an extract. As well seek to train a sculptor by making him view only the nose or great toe of the *Venus de Milo*, as try to make a lover of literature by compelling a student to read nothing but scraps. For beginners the wholes may well be very simple ones, such as some of *Hans Andersen's* fairy-tales, or *Scott's* or *Kingsley's* historical novels; but they should be literary units, and studied as such.

HOW SHOULD THE WORKS BE READ?—This brings us to another topic of my paper, viz.: how should the works of the various authors be read and studied? The first thing to be done is to place ourselves in possession of the author's thoughts. We must try to understand and appreciate his meaning. We must strive to see the subject as he sees it. We must view it as a whole, and in all its parts from the author's point of view. This involves, of course, the careful study of the form in which he has expressed himself, and implies a knowledge of the meaning and uses of words, synonyms, proper names, historical points, figurative language, sentence and paragraph structure, and metrical form; but all these should be touched on in literature only in so far as they affect or have a bearing on a comprehension of the author's meaning.

The second thing to be done is to connect the appearance and work of a writer with the social condition and political events of the age in which he lived, and to show—as far as this can be done to young or advanced students—how these influenced the character and feelings of the writer and were reflected in his works. This should not be done by formal instruction, but should be assigned to the student as problems which he would be expected to solve, just as a mathematician or scientist would assign analogous problems in their departments.

"The standing difficulty and perpetual temptation is to present to students conclusions the data for which have not been given, and critical results the steps to which have never been taken by the student himself. There is nothing more prejudicial to the young mind, nothing so fatal to its kindly and harmonious growth as the presence within it of ready-made thoughts, of alien ideas, and of too easily accepted results. The student may seem to be in possession of such ideas and conceptions, but he is not; they may seem to be the fruits of his own mind, but they are really dead artificial apples—the witnesses, not of a vigorous, spontaneous life, but of mental poverty and death. The *second-hand* is the deadly foe of original life."

A *third* thing to be done is to attempt an analysis of the ethical and æsthetics of literature, but into this I shall not enter to-night.

SECOND OBJECT.—Literature should be studied for other objects than these specified thus far in my paper. It may be studied as the basis of historical or of modern English grammar. This aim I do not propose to dwell on here: but there is a *third* object for which it may be studied, and I propose to notice it here. The aim of a student may be to acquire a knowledge of rhetoric, and if so it is quite clear that the foundation of the study should be based entirely upon a study of the works of a large number of English prose writers. In other words, we should study the *form* rather than the *matter* of literature. With this object in view every paragraph should be studied and the main topic in it noted. The structure and arrangement of the parts of a sentence should be carefully observed, as to whether such structure and arrangement expresses the author's thought in the best possible way. Doing this with a large number of authors will

lead a student easily and naturally to the inductive study of the qualities and ornaments of style. This will be especially the case where, as often happens, two or three authors all treat the same subject, and the student is thus given an opportunity of comparing the literary form of one writer with that of another. In short, rhetorical analysis should be the main object of the study of literature whenever a student is desirous of perfecting or of learning the art of literary expression. In other words, the study of rhetoric and composition should be approached entirely through the medium of the study of English literature. As usually studied, rhetoric consists of memorizing a series of rules or principles to be observed in writing an essay or other piece of composition. A student is first told to arrange his treatment of a theme under the heads of Introduction, Discussion and Conclusion. Then follows an interminable list of rules for the choice and use of words, for the formation of sentences and paragraphs, for the use of figures of speech, for securing variety of expression, and for acquiring all the qualities of style possessed by the greatest writers of every age and of every nation. Now this method of studying rhetoric is all wrong. These things should all be studied, but not from a text book. They should be evolved by the student from his study of a number of modern prose writers taken as models. This critical study of prose literature should involve a study of the merits and defects of the author's style, and would lead naturally to improvement in the style of writing of the student. If painters and sculptors find it not merely useful, but absolutely necessary to study the great pieces of works of the old masters, surely the young writer should imitate their example, for are not literature, painting and sculpture sister arts?

EARLY EDUCATION IN CANADA.

BY MISS J. T., ONTARIO.

THE first school in Canada was opened by the Recollect Fathers who were persuaded by Champlain to send missionaries to the New World. Jauray, Dolbeau, Le Carvu and Duplessis were the first to arrive. Leaving Dolbeau at Quebec, the others went on to the mouth of the St. Maurice, where a school was opened by Duplessis, better known then as Brother Pacifique. Two years later, Le Carvu succeeded in opening another school at Tadoussac "in order to attract the savages, to render them sociable, and to accustom them to our ways of living." He writes home: "I have gone to Tadoussac to be of some assistance to the Indians of these places, to give them some instruction, and to administer the sacraments to the French, and to those who live there during the trading season. I would have had quite a number of children to instruct, had I the means of subsistence to give them. As it is, I have laid before some of them the alphabet, and they have made a good beginning in reading and writing."

In 1622, the Recollects built their first convent in Canada near the River St. Charles, and there they resided until, seventy years later, a building was erected for them where the English cathedral now stands. Schools were carried on in both convents. Amid great discouragements, Langoisseau endeavoured to train native teachers. But the wandering nature of the Red Man proved irresistible, and this praiseworthy attempt ended in failure.

At length Jauray obtained aid from the Prince de Condé and others to

erect a seminary near Little River, on land granted by the king for that purpose. About the same time several primary schools were established in outlying districts.

When Canada passed into the hands of the English, the lands of the Recollects were confiscated; but a life-rent was secured to the Order as long as any of them survived. At the same time they were forbidden to add to their number. Brother Paul, in Montreal, and Brother Louis, in Quebec, were among the last to conduct Recollect schools. The last of the fathers died in 1843 at Montreal.

But a short while later than the Recollects were the Jesuits, who sent out Brebœuf, Lalemant and Masse in 1625. The first Jesuit school in Canada was opened by Father Lejeune in 1632, who writes, that, after many years of college rule elsewhere, he is content and satisfied to teach A, B, C to a little Indian on one side, and a little negro on the other, and has no desire to change his two scholars for the finest audience in France. A year later we find him with twenty pupils. "My pupils come from a distance of a mile and a half to learn from me what is new to them."

... We finish with the Paternoster, which I have composed in rhymes, for them in their own language, and which I make them sing."

In 1635 the Jesuits succeeded in laying the foundation stone of a college at Quebec. They were well assisted, and soon became wealthy. Their college was conducted on the well-known principles of the Jesuit schools, and became the best on the continent.

TEMPERANCE AND HYGIENE.*

BY WILLIAM RANNIE, HEAD MASTER, PUBLIC SCHOOL, NEWMARKET.

WE teachers believe that the true end and aim of education is the formation of character. Believing this fact then, it is evidently our duty to press upon the attention of our pupils the great danger of indulgence in the vices common to our time. Among these certainly not one stands out more notoriously than the use of alcohol.

Professor Calderwood, of the University of Edinburgh, says:—"If there be any one vice against which the teachers of our country should seek to warn the young it is drunkenness. Our national reproach because of this one vice is a bittier one; our national loss and suffering appalling to a degree not realized by those who do not ponder the statistics of the subject. Intelligence and debauchery cannot go long together, either in personal or national history. Drunkenness is a vice at which school training should level its heaviest blows." Dr. Willard Parker says: "We shall never control alcohol until we have taught the people its nature and effects, and I can see no way of doing this except through our schools."

If, then, the school is the proper channel for the diffusion of this knowledge, I have a personal word for our teachers. Many are working skilfully, faithfully, and have been for years, to discharge their obligations and duty to the community, fully realizing the responsibility resting upon them. Many of our teachers are young, just entering on the struggle, with minds and purposes only partially developed, but with this one purpose strong in

them, of leading the children placed under their charge to form purposes of true usefulness, and to train their pupils that they may be able, in time, it may be long future, to leave the world better than they found it, in short, so to live that they are each regarded as "a man among men." These leave their mark and a loving memory in every community that has been fortunate enough to secure their services. There is a third class, and fortunately their number is very small, who have no love for their work, or any work for that matter, except that it serves their purpose in the meantime. Such usually are soon understood, and are so kicked about from pillar to post that they shortly leave the profession and there are none to regret their departure.

In my estimation temperance teaching comes next to morality and religion. The man who imparts instruction on this subject must believe in it, live it, practise it, not only in regard to alcohol, but also in respect to temperance in the broadest sense of the term. He must have personal magnetism, strength of will, and that properly trained and directed, that wisdom that maketh not ashamed nor sorry. He must be a man whom the children believe in, and desire to have for a leader. He must be no *crank* to make his very earnestness distasteful to those with whom he comes in contact, but still an enthusiast, one who possesses that enthusiasm which is "catching," and carries along with him the best impulses and warmest endeavours of his children.

Surely the teacher who loves to indulge in intoxicating liquor or debauchery of any kind, or who daily

* Read at South York Teachers' Institute, April, 1888.

brings his pitcher of beer from the hotel or shop cannot teach temperance, and should have no place in our Canadian schools.

But as this subject is new on the programme the question naturally arises when should the teaching begin, how shall it be done, and in what order should the work be taken up? In this every teacher must use his individuality. Know the work thoroughly. Have a definite plan and follow it faithfully. Teach it with the purpose not only of imparting information, but of doing it so that the children will be stronger and firmer in the love of right. Try to train the children to unselfishness by holding up the good of the community, appealing to their reason, demonstrating the truth of every fact advanced by experiment or any means that will make the matter thoroughly plain to, and likely to be remembered by them.

The teaching of temperance is so closely allied to physiology and hygiene that these subjects must receive due attention. But I think I hear a teacher saying, "Those subjects don't count on the examination." Let the parents see you are doing good work, making their boys manly and likely to be good citizens. This is the purpose of the school. If you do this well you may snap your fingers at examinations. In this respect the Inspector will aid you to educate the community.

When shall we begin? As soon as we are able by familiar conversation, illustration or other means at our command to lead the children to have a clear understanding of the matter we are desirous of teaching. The second book class is not too young. The teacher can make many of the early object lessons have a direct bearing on this subject. Make *all* the lessons in fact, as far as possible, object lessons. Let the teacher use blackboard and chalk, chart or

any other means he can to make the lesson clear, real and interesting. The pupil should put the outline and important points neatly in his note book—for present study and future reference. The fact of putting down the work on paper knowing it is to be preserved will help to make the impression of the lesson stronger.

What line shall we pursue? Every teacher's individuality must decide that point. I shall try as briefly as possible to give an outline that to me seems the best. I would strive to follow along two lines. 1st. Our natural food and drink, why we need them, what they are composed of, how the body is constructed, nourished and kept in health. 2nd. Artificial drinks, their composition and effects on the different organs of the body. I propose to outline two courses, one in each line, and leave the matter with you.

The subject of one of my familiar chats with the children might be, say one of those coloured plates issued in England during the British expedition to Khartoum—children are fond of bright things, and having got them to examine and describe carefully and fully the different objects presented, describe the desert march across the country at the bend of the Nile, the sufferings of the troops for water, the terrible fight by a party to reach the Nile to get water for those who were fighting, their march back and any incident that brings out vividly man's great need of water. All over the world every body needs it. Why do we need to drink? One urchin speedily solves the question. Because we are thirsty! Yes, but why do we become thirsty? Many have never thought of that. Now comes our opportunity. A very large part of the body consists of water, most of the blood, a large percentage of the muscles, and even the bones contain about 10 per cent. of water. What

purpose does each part serve? Have it described and illustrated. Make the work and thought real to the children. Why have we bones? Why the different organs? What uses are they? What purposes do they serve and what duty perform? Describe the heart, arteries, veins, capillaries. The fluid they contain. What is its composition? Why is it a fluid? Why not a solid? Compare the action of water on plants. The influence of a dry season. The food is in the soil but it needs the water to dissolve it, so it will reach the place it is needed. Have a wilted plant. Water it. See it revive. Soak dry grain. See it shoot out and grow.

What constitutes a food? It must contain materials for forming bone, flesh, sinew, skin, hair, etc., and supply warmth. The water must carry the material to the different parts.

Our first food was milk. Milk is composed of different food products (name them) and water. Children thrive on it, grow and perform all sorts of infantile pranks with no other food. Many of our most healthy children use large quantities of milk. Animals never have any other drink but water, and if properly cared for are almost invariably well. When men or women wish to do the greatest amount of work they eat sparingly of good food and drink nothing but water. Men in training for races, feats of endurance, try to get in "good condition," as the phrase is, which means to be in the best of health and carry no superfluous or useless flesh. This is done by taking proper food, proper in quality and quantity, thoroughly masticated and slowly eaten, plenty of exercise and pure water. What is the moral of all this? If men who require to do the most severe work require water only to keep in the best health, and in fact abstain from all other drink, what folly to use any other. There

is material in this for a good many lessons.

By the time the second stage is reached the children will have attained the age of eleven or twelve, or perhaps be older than that.

What artificial drinks are known by name to the children? A number will be named. The one ingredient common to them is alcohol. Show some in its pure state. Colorless, pungent in taste, will burn, etc. Composed C_2H_5O . Have experiments conducted showing the elements and how manufactured. The source from which it is produced, fermentation and decay. Has a great affinity for water. Is never found in the natural state as water is. Describe the process of distillation. Burns with little flame and no smoke. Have lamp burning. State the amount of alcohol in the different drinks named.

Notice the large percentage in brandy—54. Show its action on animal life. How it differs from simple food in regard to its satisfying effects on the living body. The effect when taken habitually. Excites a constant desire for more. A toper can do no work until he has had liquor to steady his hand. "Drunk at night is always *dry* in the morning." As a food how it will enter into the structure of the living body—through the blood. Its effect on the organs—irritates the stomach, and in time produces ulcers. The effect of undiluted alcohol on the tissues. Absorbs the water, and dries them up. Why a fluid, possessing the properties of alcohol, is dangerous as a food. It destroys the natural appetite, the proper desire for food, and does not supply anything in its place. In what respect alcohol differs from a natural standard food as milk. It contains nothing to nourish or supply waste, but burns or uses up instead. Its action on the blood. Shrivels the red corpuscles so that they are unfit to nourish. Dries up the fibrine and

stops the current in the blood-vessels, producing congestion and apoplexy. Destroys the capillaries, hardening them so the nourishing process cannot go on. Diseased blood from alcohol. Prevents the carrying off of waste material poisoning the blood, and causing several of the organs to have more than their proper share of work, deranging them by this means. Respiration: Trace the steps which lead to the production of natural warmth in a living animal. The effect of checking respiration. Dead matter is not thrown off, and blood is not allowed to receive the oxygen, consequently it is not changed. Alcohol is an antiseptic, *i.e.*, prevents putrefaction and decay. It prevents the air to supply to the wants of the body.

Animal warmth: The effects of alcohol on its production. The effect of alcohol on the blood in respect to the process of breathing. Its effect on the blood in the extreme parts of the circulation. The common belief that alcohol warms the body. "Take a glass to keep out the cold," and another "to keep yourself cool." The fact in regard to these two expressions prolonged variations of temperature fatal, *e.g.*, a person is very warm, perspires freely and sits down to cool off; produces chills, congestion, inflammation, and sometimes death. Next take the four stages of animal life under alcohol. 1st. Exhilaration, a rise in surface temperature. 2nd. The flush of the skin dies away. The mind begins to get rather bored and languid, and there is felt a slight chilliness. Is now very susceptible to cold. It requires at least two or three hours to regain the natural warmth. 3rd stage: The great vital organs, the brain, the lungs, the liver and the kidneys all too full of blood and unfit to perform their work. The nervous system is deranged, the brain obscured, and the victim indulges in all sorts of freaks according to his

temperament, and all is followed by a great reduction of temperature. The 4th stage: "Dead drunk." Let him alone. In what respects each of these is hurtful and unnatural.

Railway drivers and servants who follow a very dangerous occupation are longer lived in the proportion of 121 to 138 than liquor dealers. An abstainer can insure his life more cheaply than a non-abstainer. Many companies will not insure a man addicted to drink. Then it produces insanity. Visit our lunatic asylums. No one cause produces so many patients. Lastly: Its effect on the pocket, our families, and friends. The picture is too common and too sorrowful. Let us cover it, hide it from our sight.

The effect on the pocket. What may be procured, say at twenty cents—four drinks—a day. The following clipping from the Renfrew *Mercury* is an illustration: "Any man who drinks two glasses of whisky per day for one year, and pays 10 cents a drink for the same, can get at the Renfrew Tea Store for the like sum of money:—Eight bags roller flour, 2 bags oatmeal, 40 lbs. Japan tea, 100 lbs. granulated sugar, 50 lbs. rice, 20 lbs. pot barley, 20 lbs. currants, 20 lbs. raisins, 20 lbs. butter, 10 lbs. cheese, 50 yards good gray cotton, worth 10 cents per yard, and a cash bonus of \$3 for making the change in his expenditure." Make the calculation for an ordinary life. Put \$73 a year in a life insurance policy for a man aged say twenty-five, etc. Visit our poor houses. Notice the wrecks. Ask the cause. Seventy-five per cent. will say that, directly or indirectly, it was drink.

Lastly, the effect on the morals—blunts the sensibility of right and wrong. Drunken men cannot be religious—they abuse, neglect and starve and bring disgrace upon their families. From a Bible standpoint

the bitterest woes are pronounced—"No drunkard can inherit the kingdom of heaven."

Where can the teacher get the necessary information on this subject? From the "Manual of Hy-

giene" used in the Model Schools, the "Temperance Primer" for the use of Canadian schools, and from a small book written by Dr. Platt, based on Dr. Richardson's work. Any teacher equipped with these need not lack.

THE AMERICAN ROBIN AND HIS CONGENERS.

BY DR. SPENCER TROTTER.

OUR American robin is a thrush—the red-breasted thrush is his proper title—he occupies a high position in the scale of bird-life, and possesses some very interesting records of his family history. When our forefathers first came over they found the frank, hearty bird with the russet breast ready to make friends with them, to stay about the clearings and around their rough cabins, cheering them with the strong, hopeful song that has ever gladdened the heart with its vigour and fulness of promise. With what joy the pioneers must have welcomed the first spring that brought the robins back after the long, dreary winter! To this day the first robin of the spring creates a sensation, coming, as he often does, amid the ice and the snow and the rough wind, and not a leaf on the trees. The early settlers called him "robin" from his red breast, no doubt, and his confiding ways, after the trusty little warbler so dear to their hearts in the old home across the sea. And so it has been "robin" ever since, although our bird is but distantly related to the little robin-redbreast of the Old World, who belongs to the warblers—another branch of the family.

By virtue of being a thrush, our robin enjoys a very extensive range of country for his habitat. From the Atlantic to the Pacific, across the continent, from the shores of the

Arctic Ocean to Mexico and Central America, he is found abundantly, breeding throughout the forest limits of this wide area, and building the same nest of dried grass, roots, and plastered mud about every homestead in the land. Although a bird of the woodland, like all the thrushes, he yet prefers the garden and the orchard—even the trees that stand in the midst of the bustling city hold his nest. Insectivorous by nature, but varying his diet largely with the small, wild berries of the woods, the robin has become, since man's invasion, a lover of fruit, keeping pace with man in the cultivation of his taste. The excellence of his taste can not be denied. He takes the biggest cherries of the most approved varieties, and the luscious strawberries are his delight. Yet for all the fruit he eats he repays the horticulturist double by devouring three-fold more of insect-life that would ultimately cover and destroy the trees, leaf, root, and branch. Fortunate it is that we have recognized his valuable service, and protected him by legislation.

The true thrushes—and the robin may be taken as a type—present some very interesting features in their development, characters, and geographical distribution, a study of which throws light not only upon the history of the birds themselves, but also upon several widely different subjects.

The thrushes belong to the most highly organized group of birds—the *Passeres*—and are farthest removed in structure from the early reptiloid forms. They possess the most complete vocal apparatus—a syrinx—situated at the lower end of the wind-pipe, with five intrinsic pairs of muscles. The wing has undergone a reduction in the number of its primaries or quill-feathers growing from the long finger, there being ten of these, the first one short and abortive, so that the thrushes may be looked upon as still advancing toward the highest type of wing-structure, that of *nine* primaries. In conjunction with this, the foot or leg is “booted,” *i.e.*, covered with an unbroken plate of hard, leathery skin, not reticulated and scaled, as in other forms. A decided change has also taken place in the “molt,” or shedding of feathers; the autumnal molt being the only complete process, while the spring change is effected simply by the “casting” off of the broken points of feathers in the worn plumage. The young of all the thrushes are spotted in their nestling dress, but never carry it beyond the first autumn, assuming the full plumage of the old birds after the first molt, so that “a bird of the year” in the late fall and winter is scarcely distinguishable from its parents. Any one who is familiar with the young robins hopping about the lawn in the early summer, with their spotted breasts and mottled backs, may have wondered what became of them by October.

The thrushes are migratory birds in the temperate zone, as the nature of their food demands, partaking in the general north and south movement during the spring and fall tides of migration. Though not strictly gregarious, many of the species associate in loose flocks, on the approach of autumn, and forage over the country in quest of food. We are all familiar

with the flocks of robins in the fall, scattering overhead, or in the gum-trees feasting on the ripe, black fruit. They are for the most part arboreal, living largely among the trees, but some of the species build nests on the ground, or in the undergrowth just above it, and all of them frequent the ground at times when food is to be obtained there. Being among the most highly organized of birds, the thrushes are consequently rapid livers, possessing a high degree of vitality, and consuming a very large proportion of oxygen. Great feeders, strong of wing and stout of heart, with warm, fast-flowing blood and high temperature, they are, in every sense of the word, alive to their environment.

The robin and his world-wide congeners form the genus *Turdus*, or true thrushes, comprising upward of fifty well-defined species distributed throughout the forest regions of the globe, excepting Australia and New Zealand, where they are replaced by an allied group.

In the palaearctic region of the Old World four widely distributed species occur, all having spotted breasts in the adult plumage. The red-winged thrush breeds in the birch region, and throughout the upper belt of pines across Europe and Asia, from the Atlantic to the Pacific. He is rare east of the valley of the Yenisei, but extends his wanderings northward as far as latitude 71° beyond the forest limit. The red-wing winters in southern and western Europe and the British Islands.

The blue-backed thrush, or “field-fare,” has a range somewhat similar with the above species; Asiatic individuals migrating in winter to Cashmere, Turkistan, and the north-western portion of India. The missel-thrush breeds throughout central Europe, ranging eastward to the north-western slopes of the Himalayas. In such a mild climate as Great

Britain offers, he remains the year round, but the majority of individuals winter in southern Europe, Persia, and north Africa. The song-thrush is another palaearctic form, breeding eastward to the Yenisei Valley, and in Norway wandering beyond the Arctic Circle. He has a near relative inhabiting northern and western China, known as Père David's thrush, in honour of a good monk who devoted much time to the study of ornithology.

There are two spotted-breasted thrushes restricted each to a certain island, and found nowhere else: the Anjuan thrush, inhabiting one of the islands of the Comoro group, lying between Madagascar and the African coast; and the St. Thomas thrush, from the island of that name, in the Gulf of Guinea.

In the New World the nearctic, or North American region, possesses several species of spotted-breasted thrushes breeding throughout its forest area. Notable among these are the wood thrush, whose mellow, rippling music we know and love so well; the hermit, the olive-backed, the gray-cheeked, and tawny thrushes—spring and fall migrants passing through our woods in May and October.

In contrast to the spotted-breasted species, there are a number of thrushes, and among them the robin, which are solidly coloured underneath, a few spots being confined to the throat. This difference in colour-pattern has undoubtedly arisen far back in the history of the group from some environing influence. The young of these solid-coloured thrushes are all spotted like the rest, and, since the young of all animals tend to revert toward ancestral forms and conditions, the spotted-breasted species may be looked upon as representing the more primitive type of thrush. A further proof of this is found in the two spotted breasted thrushes inhabit-

ing the islands above mentioned, which from their isolated habitat are undoubtedly of considerable antiquity as species. Our robin is the only representative of the thrushes with solid-coloured breasts found in North America, but a host of them occur in South America and some in Africa.

This contrast between the northern and southern continents of the New World, or, to speak zoologically, between the nearctic and neotropical regions, in the number of species of thrush, has its solution in the peculiarity and variety of physical conditions offered by South America. The ranges of the species inhabiting the great forests of the equatorial zone are in the majority of instances restricted to comparatively limited areas. The varied conditions offered by high mountain-ranges and deep, low-lying forests, tend to the creation of new varieties or local races, which are consequently limited to certain narrow areas, and a particular species is often thus represented by several extreme forms. In temperate North America, on the other hand, the fewer species are kept true by migration, which tends to equalize surrounding conditions.

In northern South America, the Valley of the Amazon, and the forests of Brazil, three distinct varieties of the white-throated thrush occur. The common South American thrush, a comparatively widely ranging species, reaching southward to Chili, has an extreme form in the north-west. The Sabian thrush is another species which has split up into several forms under the influence of local conditions. No region in the world is so rich in the number and variety of its passerine birds. In the south temperate portion of the continent the species of thrush are more uniform, and very few varieties are found.

Africa has several well-defined representatives of the solid-coloured breasted thrushes. The Zanzibar

thrush and the Abyssinian thrush are eastern forms; in the west, the Ethiopian and Senegambian thrushes are found; while to the southward the olive-thrush, Cabani's thrush, and the Kurichane thrush range throughout the Transvaal, Caffraria and Damara Land, the Bechuana country, and the Cape.

The facts, as they are presented today by this interesting group of birds, become very significant when viewed in the light of evolution. The world-wide distribution, large number of established species, and high degree of development which the thrushes have attained, denote their comparative antiquity as a group of birds. Time has been the important factor in establishing the species, and enabling them to live far and wide in harmony with diverse conditions of life. It would be difficult to ascer-

tain the original centre of their development—probably one of the great land masses, as the Euro-Asiatic continent, whence the early forms have spread to other portions of the earth, there to break up into new varieties and species under the action of changing environments.

Where other forms have succumbed in the struggle for life these have lived on, until now, the almost perfect wing and foot; the vital strength that holds the plumage for a year before it is shed, and also enables the mating pair to rear three goodly broods each spring; the vocal development, the omnivorous diet, the abundance and world-wide distribution of species, tell the story of how the robin and his congeners have come to be what they are—a dominant group in the animal life of the earth.—*The Popular Science Monthly*.

EDUCATIONAL TRAINING.*

BY WM. HENRY RAWLE, LL.D.

THE seductive doctrine that a college education is largely useless because it teaches useless things which after-life is taken up in forgetting, fails to grasp the chief object of study. For many purposes, it is, of itself, a matter of no consequence that the three angles of a triangle equal two right angles, or that the battle of Salamis was fought B. C. 480, and he whose knowledge consists largely in piling together such propositions or facts cannot be called educated. Any one may get through his classics using a crib instead of his grammar and dictionary; he may perhaps even get

through with credit; he may cram for his examinations and be glib at *functions and quaternions*; but what he thus learns will take no hold upon him, and like money easily got, it easily goes. It is the mental discipline acquired in the course of certain studies which produces what is known as the trained mind—which toughens the mental fibre, which develops concentration of thought into intellectual habit, and enables a man in after-life to do his work, of whatever kind, more easily, more thoroughly and with less mental strain and friction. This can hardly be overstated. Of course there are men who go to the front without it, but the extent to which they themselves prize this higher education, is made known to the world by the colleges throughout our coun-

* Extracts from an address delivered June 25, 1885, at Cambridge, Mass., before the Harvard chapter of the Phi Beta Kappa Society, on "The case of the educated unemployed."

try, which some of these very men have founded and endowed. There are those of us to whom it would be a disgrace not to have acquitted ourselves fairly in life. With every advantage of education, of position, of at least an even start in the race, it but needs that we should learn what we can do, and still better what we cannot do, to win at least something of what the world calls success. But a more interesting lesson is taught by the early days of many of those who bear the proud title of self-made men; whose hours, after keeping the store or teaching the school is over, are given to self-teaching—who, with the conviction that "knowledge is power," to this end deny themselves the pleasures and even the necessaries of life. It may be that the mental discipline which such as these undergo tends to self-knowledge. It is the best knowledge that can come to us, and it is, of all other knowledge, that which is the least sought after. Few attain such knowledge very early in life—many never attain it at all—and though it may be that taking thought will not add one cubic to the stature, it will at least enable one to know whether he be tall or short. Self-knowledge may not give brains where God has denied them, but it will at least teach us whether they have been given or denied.

But self-knowledge, like other knowledge, comes to us better and more quickly by being skilfully taught, than when we teach it to ourselves. One may become a fine chess player and yet never have looked at a "book opening," but he will have wasted much time and labour in teaching himself what he could easily have learned from the work of others who had gone before him.

A cobbler may not go beyond his last, and I hardly venture to speak with any confidence in this regard as to the other professions. That of the

ministry is exceptional in this country, and there have been few inducements to tempt labourers into the vineyard. But it is believed to be true that the demand for the best ability exceeds the supply, and that a vacant pulpit of a high order is filled with difficulty, and often by importation from Great Britain or her colonies. In medicine, apart from the usual ills that flesh is heir to, modern modes of life and work in our trying climate have produced complications, mental and physical, which tax the highest professional skill, and such skill in the various branches of the profession is more in demand and more highly paid than ever before. Naturally the need for young men to assist in the work is also great, and we see a certain class of these rising to assured success with a rapidity unknown in the last generation.

If it be asked how far is all this consistent with the professions being overcrowded, and with there being thousands who are doing absolutely nothing, the answer is that for those thousands there is no place in the professions. There, the race is now to the swift, and the battle to the strong. As turfmen say, "it is the pace that kills," and the pace to-day is so fast that all but a few are distanced. It is literally the survival of the fittest.

This may sound hard and cruel—it may have too much of the cry of *Vae victis*—but I believe it to be true, and perhaps it is better for the world that it should be true.

The fact is that the overstocking of the professions is but the outcome of what has been going on for more than a generation. As in an army those who command are few, and those who are commanded are the many and do the work, so in a community, the vast majority should be those who contribute to the material gain—putting it broadly, those who work with their hands rather than with their

brains. But until very lately, although one heard much of the dignity of labour, it was a dignity which too many were willing to forego, and the only implement of labour which these considered proper for their hands was a pen. Their fathers did not all share this feeling. In the last generation certain pursuits began with work that is now unknown; he who entered a counting-house went there early in the morning, took down the shutters, swept the floor and lighted the fires. A student in a lawyer's office not only copied the pleadings, but all other papers, carried notes, went to bank, and did generally what was asked of him. But the sons of that generation have considered not only that customs have changed, but that work done by men's hands, no matter what, is derogatory. Hence, employment, even as a clerk, has been as much desired as any less elegant occupation has been scorned. Of course the supply soon exceeded the demand, and the unemployed crowd, educated and uneducated, is absurdly large in proportion to the community and its wants.

The reaction seems to have set in. Some young men of the present day have, it would seem, a future before them which was denied to their elders or was undreamed of by them. Many of them seem now to feel that no work can come amiss to them for which their abilities are fitted—that no life can be too hard, no privation too great, which leads to their development. It is significant—and not as matter of regret but rather as matter of pride—that graduates of our universities are found in the machine shops of our great corporations, wearing grease-proof overalls and earning five cents an hour for a working day of eight or ten hours, out of which they pay their board. Of course, these see their future; they have measured their own capacity and fore-

see their ultimate promotion, though there is none for the first years. It is also significant that schools for mechanical instruction are springing up all over the country, and that some of our colleges have themselves introduced it among their branches.

Of course, one does not mean that our college graduates are to support themselves through life by manual labour—to be blacksmiths or brakemen or chain carriers—any more than the cadet at West Point who learns to clean his musket and his boots expects to be a private soldier or an officer's servant. There are brakemen who never get to be more, and there are soldiers who never attain the rank of a corporal. But here is where the education comes in, and the mechanical instruction and practical knowledge, based as they are on college training, are, as the mathematician would say, raised by it to a higher power. There is nothing in life which a man may do, no matter who he is or what it is he does, that he will not do better with the help of training. The extent to which the world is suffering from want of the highest education applied to its modern needs suggests lines of painful thought. Those who have been accustomed to sneer at the Baconian philosophy, and to think, as did Seneca and those of his school, that the well-being of mankind was beneath the attention of a philosopher, have had forced upon them the fact that with all the growth of civilization and wealth and taste and luxury, we are, as to many things, absolutely without knowledge. There is not a man in the world to-day who can build a cathedral, and Westminster Abbey and Notre Dame stand as monuments of what has never been done since the days when scarcely a man outside a monastery could read or write. The story told by the aqueducts built thousands of years ago

contrasts strangely with those we hear to-day of towns whose polluted water has filled their hospitals with the dead and dying. Either it is true that scarcely a man in the world knows how to drain and pave a city, or else such knowledge is so limited that its possessor is like one crying in the wilderness. Either there are few who knew how to build a house, or the many are so perverse that they refuse to have it built according to certain scientific, climatic and hygienic principles. Either there are few who can give competent judgment as to the probable future of a mine, or the many choose to employ less instructed men and lose their capital accordingly. One has but to mention such sciences as Chemistry, Geology, Engineering in all its branches, to suggest the future that therein lies to him who shall more completely give to the world their secrets. And no education can be too complete which may help to develop the practical results from the knowledge which, within this generation has come to us, that Light, Heat and Electricity are one Force with various manifestations.

Nor only this. Apart from education and mental discipline and all that comes therefrom, there is the fact that college life presents the only largely organized American existence in which play as well as work is now looked upon as a reasonable part of life. For love of play is as needful to be taught as love of work. It may be that colleges destroy some young men, but the percentage is very small; and whatever be the risks, they are invaluable if only to teach the healthy joy of play, of games, of use of the physical frame. After-life here in our serious race more or less discourages these.

We all know successful men of business who insist that in their form of career, the four years of college would be lost years. The reply is

that what the average American business man lacks is capacity for mental, indeed for any amusement. In this direction the refining influence of four college years is beyond words. Physicians will tell us that they see every month over-worked, broken-down men who need rest but cannot enjoy it, because although disease has made a vacuity of pursuit, there is nothing to fill the abhorred vacuum. They neither ride, nor shoot, nor fish, nor read in a true sense. They are like a slave who has found a great jewel. They have got the longed-for diamond of leisure, and know not how to wear it, and cannot sell it. They are forbidden to work, and no man ever taught them play of body or mind. They have won the battle of life as they intended to fight it, and the victory is like those of Pyrrhus. That inexorable creditor, Nature, is at their door and cries, "Pay me that thou owest." And they have not wherewithal to pay.

So much for college education from the hard, practical, material point of view. Even a Gradgrind must be satisfied with the picture. But if we pass from what strictly pertains to success in life to higher influences, we enter a region in which we cannot expect Gradgrind to follow us. Love of study for its own sake, shared by the sympathy of others, fostered by congenial surroundings and the interchange of thought, incited by emulation, humanizes our coarser nature, broadens our range of thought, opens to us wider views of life. By it, too, are created friendships which are not of to-day or to-morrow, nor yet of this world. Leaders of modern critical thought have branded Macaulay as a Philistine, yet surely it was no Philistine who, speaking of "the feeling which a man of liberal education naturally entertains towards the great minds of former ages," said, in words which even you can bear to hear re-

peated, "The debt which he owes to them is incalculable. They have guided him to truth. They have filled his mind with noble and graceful images. They have stood by him in all vicissitudes—comforters in sorrow, nurses in sickness, companions in solitude. These friendships are exposed to no danger from the occurrences by which other attachments are weakened or dissolved. Time glides by; fortune is inconstant; tempers are soured; bonds which seemed indissoluble are daily sundered by interests, by emulation, or by caprice. But no such cause can affect the silent concourse which we hold with the highest of human intellects. That placid intercourse is dis-

turbed by no jealousies or resentments. These are the old friends who are never seen with new faces; who are the same in wealth and poverty, in glory and in obscurity. With the dead there is no rivalry. In the dead there is no change."

It may well be that much of this is little felt in the hey-day of life and while one is pressing on in the race to the front; but life is not all made up of health, of strife, of victory, and at every interval of enforced inaction, and still more when the lengthening shadows of age stretch along our path, then these friends come to us, as it were from a far country, and bring us that peace which the world cannot give.—*Penn. School Journal*.

EDUCATION FOR WOMEN.

ACCORDING to the London *Queen* a great change is coming over public opinion in England on the subject of technical education. Since the passing of the Education Act, and even anterior to that, people were gradually realizing the fact that though theoretically every child in England was being taught, the education given was only imparted in one direction—that of intellectual development; while the education that was really needed, of an industrial or technical kind, training them in some industrial knowledge, and enabling them to learn the elements of work out of which they could make a profession, was entirely neglected. Till within the last fifteen years the education of women in the upper and middle classes was supposed to be completed after a year or two of very superficial teaching at a fashionable school, where a smattering of foreign languages and a few showy accomplishments were taught, which enabled a girl to make some display of

education. If the teaching a girl received was of such a nature as added to the pleasure and interest of her life by enabling her to develop what qualities of mind and imagination she possessed, it would be impossible to describe it as useless; but, as was generally the case, it was of so superficial a character as to be practically of no use to her in after life.

Up to a certain point the education of all young people must be substantially the same, for the object of all education is to develop what intellectual powers they possess and train them in habits of discipline and virtue; but, as their employments and duties must be so various, they should begin early to receive special training for the work they intend to take up. The acquiring of any special knowledge is, properly speaking, a part of education. Yet until now it has not been considered in that light, or even begun until the school education is finished.

The separation of technical and

elementary education has been a great misfortune; for, owing to the poverty in most cases and the cupidity in others of their parents, children are removed from school as soon as they have passed the standard of knowledge which the law enforces, and are at once put at some work, where their earnings add to the income of the family. The education they have received is comparatively limited. They have mastered the initial difficulties of reading, writing, and arithmetic, but to so small an extent that they are practically of little permanent value to them.

Theoretically, school education and industrial training should be given together, though how to accomplish it is one of the most difficult problems of the day. Technical training is now part, to a greater or lesser extent, of the teaching given in most industrial schools, homes, and ragged schools, and there the system is found to work admirably. The objects attained are not so much to train each child for some special profession, as, though desirable, that would obviously be impossible as a general system, but to promote health, develop the muscles, and encourage habits of steadiness and industry. The technical education of girls is, however, of much more importance and necessity than that of boys. If it were possible the ordinary domestic knowledge necessary for a woman to know should be conducted at home under the guidance and example of the mother; but, unfortunately, among the lower and very poor classes in this country, especially in our large towns, many of the mothers are absolutely incapable of imparting it, and the homes of many present a picture of want, improvidence, and dirt. The employment of women in factories and outdoor work, with the freedom after certain hours such occupation allows, has caused a great aversion

among girls to domestic service, which entails great discipline, more self-restraint, and a restricted freedom. The necessity of keeping hours, the rules often enforced about dress, the submission to the caprices of an ill-tempered mistress, added to the smallness of the wages, have tended to increase the difficulties of persuading young women to become domestic servants.

We thus find that with no training at home a generation has sprung up in which great part of the married women have lost whatever traditionary housekeeping their mothers may have had, and they can neither cook, wash, nor sew. The consequence is that the food of the household is unsavory, indigestible, innutritious, and at the same time extravagant, and the whole menage has the character of untidiness and discomfort that often drives the husband to the public house. For girls of this class there is needed some training in the very elements of housewifery; while for all classes a much wider and more general knowledge of household matters is needed. The pictures often described of the misery and unhappiness of homes where the woman has no knowledge of housekeeping, and therefore no power to make her home comfortable, are by no means overcoloured. We see them around us every day of our lives. The lives of most women are made up of small things; the cleanliness of a room, the cooking of a dinner, the cut of a gown, all seem so insignificant, and yet in so many women's lives their whole happiness and comfort turn on matters of no greater importance.

The cause of all these failures is not an obscure one, nor is its origin far to seek. It proceeds entirely from a want of proper training. There are some women who, by nature and character, are unthrifty and untidy, and on whom no training would have

much effect; but they represent a very small section. English women, generally speaking, are careful and orderly in domestic matters, in spite of the want of method and knowledge which is one of the gravest defects of the present system of education. As was pointed out before, the tendency hitherto has been to educate woman in such subjects and accomplishments as would enable her to pass muster among other women who made some pretensions of being considered well-taught and accomplished.

The entire worthlessness of all such education would be proved when a young woman was called on to start and manage her own household, and when her inability to direct or teach her servants forced her to realize her ignorance.

All these difficulties would be surmounted were it the custom in England to instruct every girl, whether rich or poor, in some elementary knowledge of domestic matters. There is no more indignity in knowing how to make a bed, clean a grate, or sweep out a room, than in mastering the rudiments of any more erudite branch of learning. All professional work needs a complete mastery of the minutest details to insure success, and in no profession is such complete knowledge of more importance than in that of the mistress of a household. In other countries the importance of training girls not only in such subjects as will enable them to earn their living by other means than that of teaching is widely felt, and, as we shall presently show, a great amount of technical education in various branches of domestic work is given. In England alone no such training exists, and with a technical education act among one of the schemes Parliament intends to deal with next session, too much importance and publicity cannot be directed to the matter. So much of the necessary machinery al-

ready exists that it would not require a great expenditure to inaugurate some technical elementary instruction for girls on a small scale as an experiment.

In Germany and Denmark especially, and also to a limited extent in France, there are special schools for training girls in dairy work and all matters pertaining to farm work. The largest school of this kind in Germany is at Baden, in the grand duchy of Mecklenburg-Schwerin. It owes its existence to private liberality, but it has a subvention from the state of £325 a year. The same training is also given at Heinrichstal, in Baden-berg, in Saxony, where ten or twelve young women are taught the theory and practice of butter and cheese-making. The practical instruction is given by a mistress, and includes technical management of a dairy, including bookkeeping, feeding and management of cows, fattening calves and pigs, instruction in cooking, housekeeping in general, management of poultry according to their season, management of the kitchen garden. At Hildesheim, in Hanover, another dairy school of a like kind exists, with a grant from the Agricultural Society of Hanover of £225, which stipulates that six pupils shall be provided with board, lodging and teaching for a whole year at £18 each. The pupils give their services in the dairy until one o'clock, after which hour they are taught housekeeping. The heavy part of the work is done by servants, but if the pupils do not know how to perform any description of dairy work they are taught it carefully. In the afternoon the pupils are taught reading, writing, arithmetic, history, geography, etc., in fact in all the elements of a general education, as well as sewing. It will be thus seen that general education and exercise in housekeeping are combined with technical instruction. Many of the pupils are young

women in a good position in life, daughters of large as well as small farmers. Some also who come from the towns, being about to be married to young farmers, require to learn everything connected with the man-

agement of a farmhouse. We have taken these farms as an example of how the system worked; but there are no less than sixteen dairy farms in Germany conducted on similar lines with the same object.

CORRESPONDENCE.

Editor of THE MONTHLY :

DEAR SIR,—Can you afford me a little of your valuable space to have a chat with my fellow-workers on the matter of inspection of our High Schools? Doubtless you have received a copy from the Education Department of the Revised Statutes and Regulations respecting Public and High Schools for Ontario: well, in this latest production of the Education Office, at p. 109, Reg. 22, you will find the following: "In case a High School Inspector reports that the equipment of a High School or Collegiate Institute is insufficient, or that the grounds are too limited in area, or that the school building is inadequate for the accommodation of the pupils, or that the staff or any member thereof is incompetent, or that the staff is insufficient for the attendance or for the number of subjects taken up, the Minister of Education will forthwith notify the Chairman of the Board of Trustees, and on the neglect or refusal of the said Board to remedy the defect complained of within a reasonable time, the Legislative Grant may be withheld from such High School or Collegiate Institute until such time as the regulations are complied with."

Your readers will please observe that this Regulation places everything in connection with our intermediate education in the hands of the Minis-

ter of Education. In so far as this is confined to the material equipment of the schools—buildings of various kinds, sites and play-grounds, apparatus and means of performing experiments—careful oversight may be necessary, and at any rate will be comparatively harmless. But what about the part of the Regulation which refers to the internal economy of the school—the qualifications and competency of the masters and teachers?

Before appointment to their positions in the schools, the masters and teachers must have had the qualifications required for such positions, and their competency also must have been attested in some satisfactory way. Why then all this undue interference by the Head of the Department? To your correspondent, a humble servant of the public, it appears to be officious intermeddling to the annoyance of the teachers, and another clear proof of love of power on the part of the officials in connection with the Education Department. An expression of opinion from my fellow-workers in the schools on this Regulation would be useful to me, and I have no doubt many others are in the same position. I hope all the masters are not "tuned" to silence.

Yours respectfully,

SCHOOL.

Ontario, 26th April.

EDITORIAL NOTES.

THE CANADA EDUCATIONAL MONTHLY desires to thank the friends who have contributed to its pages for years, and specially those who have rendered valuable assistance during the last few months.

By the will of the late Hon. John Hamilton, of Montreal, Trinity College, Toronto, receives a legacy of \$2,500. Knox College also receives a similar benefaction of a somewhat larger amount from the late Mr. Bowman, of Toronto.

DR. WHITE has issued his first report as superintendent of the Cincinnati schools, and in it he holds the census-taker responsible for inaccurate returns concerning school population. For instance, in 1885, the children of school age, as reported, were 10,000 more than in 1887, though the city had grown rapidly in the two years, and of course these 10,000 were added to non-school-going children. This experience is not at all new to Ontario. The population steadily increases, but according to reports from education department the number of children of school age diminishes.

A DISTINGUISHED Englishman, poet, critic, scholar and thinker, passed suddenly away a few days since. Matthew Arnold, full of work and influence, the foe of the Philistines, the strong pleader for light and culture, for tolerance and advancement, in the "sounding labour-house vast of being," will lift his voice no more here. The circumstances of his death will recall to many the very similar circumstances of the death of the great head master of Rugby, his father. Mr. Arnold had written many books,

and is well known and gratefully remembered in the educational and literary world for his services to his fellow-teachers and to his country.

UNIVERSITY OF MCGILL, MONTREAL.—The Annual Arts Convocation of McGill University was held on the afternoon of April 30th. The proceedings were of an unusually interesting character, being graced by the presence of our highly esteemed Governor General and his Lady, on what we regret to know must be their farewell visit. The medals and scholarships were presented as usual. The Chancellor, Sir William Dawson, conferred the degree of B.A. on eighteen gentlemen, a distinguished company of eight young ladies also graduated, amid great enthusiasm. This number, the first to benefit by the timely and princely generosity of Sir Donald Smith, will doubtless be the forerunner of many others, cultured and refined young women, who will go out to bless our Canadian homes. We congratulate historic McGill, on being the first among our seats of learning, to provide a *separate* and *suitable* course of college instruction for women.

WE direct the special attention of our readers to the selection we have made this month from the London *Queen*. The things which the *Queen* finds wanting in England, want of knowledge of house-keeping, want of skill to make a bed, or mend a stocking; and those things which it finds, meals badly cooked, but extravagant in cost, dirt abounding in the house, husbands driven from the "home" in sheer disgust. These things, we are sorry to say, are not confined to England; here, in Canada, we have the same things. The same difficul-

ties meet us at every turn. Young women, impatient of domestic service, unwilling to take the trouble of acquiring the skill necessary for household work, and which comes only of constant practice.

The London journal charges most of this state of affairs to the educational system of their country, and, we think, with good reason; one thing is certain, that if any system of education constantly emphasizes subjects calculated to withdraw the attention of the pupils from their daily life work, the results will be disappointing though the logical outcome of the system. We should not expect farmers or mechanics to abound in a country where the chief attention in the schools is given to training young men and young women how to keep books by single and double entry.

REPORT OF THE MINISTER OF EDUCATION FOR THE YEAR 1887, WITH THE STATISTICS OF 1886.

THE first fact that strikes us on opening this Report is the decrease in our school population. In 1876 it was 502,250 between the ages of five and sixteen years; in 1884, 471,287 between the same ages, and in 1886, 601,204 between five and twenty one years of age. The extended age limit will account for the increase in the last number. The Hon. Mr. Ross speaks of these figures as showing a fluctuation which he cannot explain. They show not a fluctuation, but an actual decrease, while the whole population has been steadily increasing; and in regard to the explanation, we fear that causes are at work similar to those operating in the Eastern States to retard the increase of population. The fact revealed by the table of school population harmonizes with what has been noticed by close observers of our social condition, that large families in

Ontario are becoming few and far between. Should this state of things continue we must depend mainly upon immigration for such increase in our numbers as has been going on in the past.

The number of pupils registered in 1886 was 487,496—an increase of 18,057 over 1885. An average of 239,044 pupils attended every day—this is a little over forty-nine per cent. While the average attendance is gradually increasing, it is still small when compared with that of most European countries. The irregular attendance of the remaining fifty-one per cent. draws forth from the Hon. Mr. Ross some observations that are well worthy of consideration. He shows its adverse effects upon the work of the school, upon the scholars who are irregular, upon thorough education, and upon the pockets of the ratepayers. He points out that in 1886, 238,042 pupils attended school less than 100 days; of this number there were 93,375 between the ages of seven and thirteen years who were required by law to attend that number of days. He has to admit what the public school inspectors deplore, that the compulsory powers conferred upon trustees to enforce attendance are not exercised. But why does not he, as the responsible head of the Education Department, take measures to have the compulsory law enforced? We know of no more cogent reason for withholding the legislative grant than that those children who need education most are not receiving it. The county that had the highest average attendance was Waterloo with 53 per cent.; Haliburton was again lowest with 31; Mitchell took the lead among the towns with 68, and Hamilton among the cities, with 69. St. Mary's among the towns, and Ottawa among the cities had the lowest average attendance, with 46 and 56 respectively. Mr. Ross in

the present report has followed our plan of giving prominence to these facts, so we have to do but little more than reproduce his figures. Of the total attendance, 40 per cent. were in the First Book, 20 in the Second Book, 22 in the Third, and 17 in the Fourth. In the Fifth, or High School Reader, there were only a little over 1½ per cent., this shows a decrease of 1,095 since 1885, which is to be accounted for by the policy of the Minister to discourage the formation of any class above that of the Fourth Reader in our Public Schools. We were glad to see, by a discussion that took place at the last session of our Provincial Parliament, that some members are becoming alive to the tendency of this policy. They are disposed to take a stand against it on the ground that the Public School is the proper place for the children of the country to receive such education as will fit them for life and citizenship, and if they must go to the High School to complete that education the Public School system is so far defective. This is the view of the most intelligent teachers, and one that has been repeatedly upheld in this journal. The truth is that, as the Ontario Teachers' Association once declared, the Public School course should overlap that of the High School, not end where it begins. As a set off to this, one of the benefits the country has reaped by the Hon. Mr. Ross' administration has been the increased attention paid to drawing and music—the number of pupils in the former subject being more than three-fold the number eleven years ago.

The number of teachers employed in 1886 was 7,364, of this number 37 per cent. were males, and 63 per cent. females. Ten years ago the male teachers were 45 per cent. of the whole, hence there has been a gradual decrease in the relative number of male teachers. This is to be regretted;

for however competent female teachers may be in imparting the elements of knowledge, and in developing the æsthetic side of children's natures, they cannot prepare them for the duties of life as well as men can, especially when the pupils reach the advanced classes (boys). The Hon. the Minister of Education, who expresses views similar to our own on this matter, enumerates three causes for the decrease in the number of male teachers: (1) The small salaries paid; (2) The insecurity of the teacher's tenure of office; (3) The difficulty in obtaining a residence, particularly in rural districts. The last cause he shows could be got rid of by the trustees building residences; the other two he does not deal with, but they are to some extent within his own control. The teacher's tenure of office might be made more secure by appointing him during good behaviour, and not as at present. This could only be done by making a change in the law, which change could be best accomplished by the Minister. The deficiency in salaries might be made up by an allowance from the Provincial exchequer to all those teachers who hold the higher grade of certificates. But a far more effective means than either of these for retaining the best male teachers in the profession would be a longer and more thorough professional training than we have at present. So long as young men find it easy to enter the profession we can hardly expect the best of them to be more than birds of passage, particularly as their non-professional certificates will stand them in good stead in whatever other profession they may take up. A lengthened course of practical training would tend to create a proper professional spirit, and by decreasing the number of teachers would lead inevitably to an increase of salaries. In regard to salaries the following statistics may be interesting:—Highest

salary paid in 1876, \$1,000; in 1886, \$1,200; average salary for the Province in 1876, male, \$385; female, \$260; in 1886, male, \$424; female, \$290. The Minister clearly shows that the slight increase which these figures indicate is not at all commensurate with the increased expense in securing even the lowest grade of certificate. Evidently, if words mean anything, he is in sympathy with increased remuneration to teachers, and we will venture to suggest that he might give practical evidence of his feelings, and at the same time set a good example to the school boards throughout the Province, by raising the salaries of the teachers in the Provincial Model Schools, so that they should be the highest in the Province.

The total receipts were \$3,993,483, consisting of \$265,912 from the legislature, \$2,826,396 from municipal taxes, and \$901,155 from clergy reserves and other sources. The total expenditure was \$3,457,699, of which about 69 per cent. went for teachers' salaries. The cost per pupil on average attendance was \$14.46 per year, just 31 cents more than it was ten years ago. The cost per pupil is, as usual, highest in the counties, owing to their low average attendance.

SEPARATE SCHOOLS.

The statistics of the Separate Schools present some features worthy of remark. Though both school-houses and teachers have increased there has been a decrease in receipts of \$24,188, and in expenditure of \$24,800. The average salary of teachers in counties was \$324, in towns \$497, and in cities \$291. The apparent anomaly of cities paying the smallest salaries is doubtless accounted for by the fact that the religious orders largely supply the teachers there. The percentage of average attendance was 55.

COLLEGIATE INSTITUTES AND HIGH SCHOOLS.

Number of schools, 109; number of teachers, 378; number of pupils, 15,344; receipts, \$502,315; expenditure, \$477,797; cost per pupil on average attendance, \$54.31; percentage of average attendance, 57; average salary of teachers, \$800. There has been an increase in all but the last two items, and we may hence conclude that our High Schools are in a prosperous condition. The increase in the attendance is due largely to two causes: (1) The policy of the Department in discouraging any work in the Public Schools beyond that of preparing for the High School Entrance Examination, and (2) the adaptation of the curriculum to the necessities of those preparing for teachers' certificates. The result in the one case is that the High School has to do a large amount of elementary work which could be done as well and much more cheaply in the Public Schools. In the other, by regulating the curriculum to suit the aims of intending teachers, the course of higher education, which these schools were originally established to foster, is hampered, and the number of teachers is unnecessarily increased. We agree with the Minister as to the propriety of charging fees in our High Schools, and are glad, with him, that the tendency in this direction is becoming more widespread. When we find the Legislature contributing ten times as much per pupil for the support of these schools as for those which impart the elements of education, we have a right to expect that the parents who send their children to them will share in the expense of maintenance. Care should be taken, however, that any fees that are charged should not have the effect of excluding the children of poorer parents from the advantages of a higher education.

The number of pupils who study the subjects which bear more directly on practical life has greatly increased. Drawing was taken up by 85 per cent. and book-keeping by 79 per cent. of the whole attendance. Of those who

attended in 1886 there were 964 who entered mercantile life, 638 took up agriculture, 797 joined the learned professions, and 337 matriculated at some university. We shall return to this Report in our next number.

SCHOOL WORK.

MATHEMATICS.

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

SELECTED PROBLEMS.

67. If $(a^2 + b^2 + c^2)^2 = 3(a+b+c)(b+c-a)(c+a-b)(a+b-c)$, prove that a, b, c are all imaginary or all equal.

68. Prove that a triangle ABC is equilateral if $\cot A + \cot B + \cot C = \sqrt{3}$.

69. Solve the equation.
 $2^{2x+2} + 4^{1-x} = 17x = \pm 1$.

70. Find two points, D, E , in the sides AB, AC , of a triangle ABC , such that $BD + CE = DE$.

71. Solve the equations, $xy + yz + zx = 47$,
 $x(y+z-x) + y(z+x-y) + z(x+y-z) = 44$.
 $\frac{x}{y+z} + \frac{y}{z+x} + \frac{z}{x+y} = \frac{65}{42}$.

72. In the ambiguous case of the solution of triangles, the given angle is 60 degrees; prove that the distance between the circum-centre, and ortho centre, of either of the two triangles, is equal to the third side of the other triangle.

A solution to the following question was asked for by one of our subscribers:

A man, assisted part of the time by a boy, did a work in 15 hours. The man got $\frac{2}{3}$ of the pay and the boy $\frac{1}{3}$, but the man was paid at double the rate of the boy in proportion to the work done by each. How long would it take the man to do the work alone?

If $\frac{1}{a}$ denote part done by the man.

$\frac{1}{b}$ " " " boy.

Since man is to receive twice the pay in proportion to work done,

$$\therefore \frac{2}{a} : \frac{1}{b} :: 5 : 1$$

but $\frac{1}{a} + \frac{1}{b} = 1$ = whole work, $\therefore \frac{1}{a} = \frac{5}{7}$

Since $\frac{5}{7}$ of work is done in 15 hours,

$\therefore$ man could do the whole work in 21 hrs.

Or, with regard to pay,

man's : boy's = 5 : 1

with regard to work,

man's : boy's = $2\frac{1}{2}$: 1 or 5 : 2,

man does $\frac{5}{7}$ in 15 hours, would do whole in 21 hours.

Solutions to the following problem which appeared in issue of Oct. 1887, together with original solutions of several problems by D. F. Hy. Wilkins, B.A., Bac. App. Sc., Principal High School, Beamsville, Ont.:

It is required to find the outside diameter of a hollow shaft of the same strength as a solid shaft ten inches in diameter, the inside diameter of the hollow shaft being six inches.

It is to be observed that the material of the shaft is not stated, also whether it is placed in an upright, slanting, or horizontal position; nor whether it is a stationary column or a revolving axle. This solution supposes a fixed, cast iron, vertical column, and Hodgkinson's formulæ are used.

$$S = M \times \frac{D^{3.5} - d^{3.5}}{l^{1.63}}$$

$$S_1 = M \times \frac{D^{3.5}}{l^{1.63}}$$

When D = external diameter, d = interior diameter, l = length of column, M = a certain constant depending upon the nature of the iron, generally = 42, M = ditto, but varying between 39.60 and 49.94.

S = the strength of a hollow column
 s = the strength of a solid column

Now S is to equal s .

$$\therefore M \times \frac{D^{3.5} - 6^{3.5}}{l^{1.63}} = \frac{M \times 10^{3.5}}{l^{1.63}}$$

taking $M = 39.60$

$$42(D^{3.5} - 6^{3.5}) = 39.60 \times 10^{3.5}$$

$$D^{3.5} = \frac{39.60}{42} \times 10^{3.5} + 6^{3.5}$$

$$= 3510.65682 \text{ approx.}$$

$$\text{whence } D = 10.3093 \text{ inches.}$$

MODERN LANGUAGES.

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

EXERCISES IN ENGLISH.

1. Substitute equivalent phrases for those italicized.

- I am doing this *to benefit you*.
- They found it *after a long search*.
- He behaved *like a gentleman*.
- We went there *expecting to visit them*.
- He has applied *for admission*.
- I am anxious *for a settlement of the question*.

2. Change the voice of the finite verbs.

- Such a plan had never been heard of.
- Have the usual notices been given by the secretary?
- No one could have foreseen such a result.
- Teachers often lose sight of this fact.
- The paper he sent us gives full details.
- The story was told me by one of the crew that accompanied him.

Expand into compound or complex sentences.

- Turning to his comrade he whispered to him.
- The reality far exceeded our expectations.

(c) On their approach he advanced to meet them.

(d) Probably he has forgotten to tell them.

(e) I was too tired to accompany them.

(f) On his death he was succeeded by his son.

(g) Among them was one belonging to his brother.

(h) He was born in the reign of George III.

(i) Never was punishment more deserved.

(j) In the hope of eluding his pursuers he resolved on a desperate step.

3. Write sentences containing the following words correctly used: Laid, lain, hanged, hung, attended with, overwhelmed by, you and I, Mary and her, looks well, looks good.

4. Which is correct?

(a) There was no need of (for) such a thing.

(b) Who (whom) did your friend say had been elected?

(c) I will (shall) see to it that no one shall (will) be allowed to enter.

(d) Was (were) more than one person of that opinion?

(e) I have sent him word so that he may (might) be ready for us.

5. Accentuate the following words: Allies, inquiry, advertisement, adult, horizon, photographer, recess, robust, precedence, peremptory, mischievous, lamentable.

6. Classify the phrases in the following according to their grammatical value, and give the relation of each:

(a) To give them no excuse he offered to wait here.

(b) In the hope of recovering it he unfortunately waded into the stream beyond his depth.

(c) Their boat having been destroyed, their only chance of escaping from the island was to construct a raft.

7. Classify the subordinate clauses and give their relation.

(a) If I could only remember where I saw it last I would get it for you.

(b) It is a pity that you can't remember the way that he did it.

(c) When you find out who wrote the letter that he read to us you will be sorry for what you said.

8. Change the following :

(a) From direct to indirect narrative.

"Well," said the peasant, with a scornful laugh, "the wood was mine: I had a right to ask just what I pleased for it; and nobody has a right to call my conduct in question."

(b) From indirect to direct.

The stranger told the boys that the king would not hunt that day, but that when he did he would let them know; and they must not come by themselves lest they should meet with some accident.

9. Combine the following groups into, not more than four sentences each.

(a) Dr. A. was a very learned man. One day he was busy in the study. A little girl came to him. She asked him for some fire. She had nothing to take it in. The doctor said so to her. He was going to get something for that purpose. She stooped down. She took some cold ashes in one hand. She put live coals on them with the other. The doctor was astonished. He threw down his books. With all his learning he would never have thought of such an expedient. He said so.

(b) A Roman lady was very rich. She was fond of pomp and show. She was on a visit to Cornelia. Cornelia was the mother of the Gracchi. The Roman lady displayed her diamonds and jewels. She did so ostentatiously. She wished to see Cornelia's jewels. She asked for them. Cornelia turned the conversation to another subject. She waited for the return of her sons. They were at school. After a time they returned. They entered their mother's apartment. She pointed to them. These were her jewels. She said so to the lady.

10. Brisk wielder of the birch and rule,
The master of the district school,
Held at the fire his favoured place,
Its warm glow lit a laughing face,
Fresh-hued and fair, where scarce appeared
The uncertain prophecy of beard.
He teased the mitten-blinded cat,

Played cross-pins on my uncle's hat,
Sang songs, and told us what befell
In classic Darmouth's college halls.

(a) Classify and give the relation of the subordinate clauses.

(b) Select the adverbial phrases and give their relation.

(c) Make out lists of (1) the inflected words, (2) the English derivatives, (3) compound words, (4) nouns used as adjectives.

(d) Classify the verbs as transitive or intransitive.

(e) Give the syntactical relation of *wielder*, *prophecy*, *what*.

(f) Write sentences in which the following shall have a different grammatical value from that in the passage: Rule, laughing, master, place, glow, face.

11. Point out and correct any faults in the following sentences:

(a) Were either of you girls in the room when he done it?

(b) I have only seen him once since he has left school.

(c) She don't want to go without she hears from him.

(d) I wish it wasn't so late, for I will probably not have another chance of seeing you.

(e) The place looked just like it used to when I went to school.

(f) There were many people frozen or died of exhaustion that day.

CLASSICS.

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

BRADLEY'S ARNOLD.

Exercise 23 A.

1. Illud jamdiu scire cupio, cur adeo pertimescas ne tui obliviscantur cives. 2. Tu, quid de hac re censeris et ego et pater meus jamdudum cognoscere cupiebamus. 3. Massiliam quum veneris, velim fratrem tuum roges cur nullas ab eo acceperim literas. 4. Dixi judices et consedi, id quod ipsi videtis; vos jam de hac re judicate. Spero equidem et jam pridem spero, hunc hominem vestrum omnium sententiis absolutum iri. 5. Medidum hæc parant, Græci jam ad Isthmum

convenerant. 6. Pater tuus ad extremam senectutem quotidie aliquid addiscebatur. 7. Hostes quoties infelicissimæ hujus gentis oppidum expugnaverant, nulli parebant, trucidabantur mulieres pueri, senes infantes, nullo vel ætatis vel sexus facto discrimine.

Exercise 23 B.

1. Eum qui primus murum conscenderit corona se aurea donaturum pollicetur. 2. Tibi, cum Roma rediero, cur te accessiverim dicam. 3. Jam diu negabant Galli se vel legatis obviam ituros, vel conditiones quas Cæsar ferebat accepturos. 4. Constare subito hostes; sed illi dum tempus terunt, nostri clamorem tollere, in mediam peditum aciem impetum facere. 5. Videbat jam in imperator ab hostium multitudine preni suos, qui conjectis jaculis, glandibus, sagittis nostros de colle deturbare conabantur. 6. Dixi judices; vos cum sententiam dixeritis, manifestum erit utrum iste impune domum rediturus sit, an tot scelerum poenas daturus.

Exercise 57 B.

1. Quod si cum veterano exercitu in fines nostros bellum intulisset hostis, et tironem exercitum fudisset nostrum, nemo hodie superesset Germanus. 2. Quod ego certamen si detrectavero, vel timidum me et ignavum si pæbuero, tum tibi si libebit ignobilitatem mihi meam objicias licebit, tum demum turpissimum me hominum, si voles, atque abjectissimum dicito. 3. Napoleon vero si semel exercitum suum Rhenum trajecerit, vereor ut quisquam ei cis Vistulam obstare possit. 4. Quod si satis hodie pugnatum est, milites ad sua quemque signa revocemus, et meliora in diem crastinum speremus; cras si manifestum erit non jam resisti posse, tempori quamvis inviti cedamus, et sibi quemque consulere jubeamus. 5. Quod si, cum Romam perveneris, literas a me accipere voles, fac prior ad me scribas. 6. Italiam, inquit, cum perventum erit, aut Romam vos, si voletis, statim ducam, aut, cum opulentissimas urbes Mediolanum ac Genuam diripiendas tradidero, domum, si maletis præda ac spoliis onustos mittam. 7. Nos, troium si quem ex agmine procurentem viderant, aut a suis relictum, in eum omnes tela conjiciebant. 8. Properato, inquit, non

consulto, nobis opus est; quo si maturius usi essemus, vellum nobis hodie esset nullum. 9. Qui, si per te licuisset, et viverent hodie set communem reipublice causam armis sustinerent. 10. Hæc si a me quesivisses num fratrem tuum, hominem nequissimum, time-rem, timere negavisses; adeo me hæc nunciata clades sollicitum habet, ut si idem quæras timere me respondeam.

CLASS-ROOM.

ARITHMETIC.

BY RICHMOND.

1. Sold a house for \$1,600, which was 25 per cent. more than $\frac{2}{3}$ of cost. For what must I sell it to gain 20 per cent.?

Ans. \$2,304.

2. At what rate per cent. will \$187.50 amount to \$300 in $4\frac{1}{2}$ years?

Ans. $13\frac{1}{2}$ per cent.

3. A roller is 12 feet long and 15 feet in circumference, how many turns will it make in rolling 12 acres?

Ans. 2,904.

4. $12\frac{1}{2}$ per cent. more is gained by selling a 100 acre farm at \$50 an acre than by selling it at \$45 an acre. Find the cost.

Ans. \$4,000.

5. What sum of money will have an interest of \$360 in $2\frac{1}{2}$ years at 6 per cent.

Ans. \$2,666 $\frac{2}{3}$.

6. A's farm is $1\frac{1}{2}$ miles square, and B's $1\frac{1}{2}$ square miles, and C's $\frac{3}{4}$ of the difference. How many acres has C.?

Ans. 320 acres.

7. Sold a house for 25 per cent. more than cost, and the sum of the cost and selling price was \$2 700. Find the cost.

Ans. \$1,200.

8. A man can pay only \$6,400 out of a debt of \$8,200. He owes one person \$500. How much does that person lose?

Ans. \$109 $\frac{1}{2}$.

9. Divide \$990 among A., B. and C., giving A $\frac{1}{4}$ as much as B and $\frac{1}{3}$ as much as C.

Ans. \$165, \$330, \$495.

10. Find interest on \$350 from Aug. 7th, 1887, until Mar. 13, 1888, at 10 per cent. per annum.

Ans. \$21.

11. The fore wheel of a carriage is $7\frac{1}{2}$ feet in circumference and the hind wheel 12 feet. In what distance will the front wheel make 198 turns more than the hind wheel.

Ans. $\frac{1}{2}$ mile.

12. How much water must I add to 48 gallons wine at \$4.25 a gallon that I may sell it at \$3.50 a gallon and neither gain nor lose?

Ans. 10 $\frac{1}{2}$ gallons.

13. A map is drawn on a scale of 3 inches to a mile. How many acres represented by a map 10 inches by 12 inches.

Ans. 8,533 $\frac{1}{2}$ acres.

14. Find value of
 $\cdot 03$ of 6s. 8d. + $\frac{1}{4}$ of £1 3s. 4d. - $\cdot 016$ of 5s. 6d.

Ans. £1 1s. 9.3d.

(b) Bills payable Dr .. \$727 50

Int. and disc't Dr. 22 50

To bills receivable. \$750 00

4. Remitted to W. Muir cash for balance of note (No. 3), and interest due on the same. Interest \$1.30.

4. Bills payable Dr. \$272 50

Interest Dr. 1 30

To cash. \$273 80

5. Bought a quantity of broadcloth in company with John Smith, \$250; paid cash for my half, \$125.

5. Merchandise Dr. \$125 00

To cash. \$125 00

ENTRANCE LITERATURE.

"THE DEMON OF THE DEEP," p. 266.

There is a marked resemblance in style between this extract and the one on the "Conquest of Bengal," p. 222. The sentences are short, and the words are skillfully arranged with a view to emphasis. Throughout this extract the paragraphs average about ten lines each. The probable purpose is to sustain the attention of the reader. On pages 268-9 a paragraph is given to a description of each step in the progress of the devil-fish. So vivid is the description that the reader can hardly avoid experiencing sensations of disgust and horror similar to those of Gilliatt.

Tentacles—the slender flexible organs possessed by many of the lower animals.

Antennae, pl.—same as tentacles.

Ligature—anything that ties or binds.

Focus—a central point.

Glutinous—tenacious, covered with slimy moisture.

Testacea—a general name for animals furnished with a shelly covering, as the oyster.

Crustacea—a general name for animals with jointed shells, as the crab and lobster.

Cephalopod (sef' əl ə pōd)—a class of animals so called from the principal organs of locomotion being arranged round the head.

Octopus—the name given to an order of cuttle-fishes with eight arms attached to the head.

Vampire—an imaginary demon, said to be a person who after death returns nightly to

ANSWERS TO CORRESPONDENTS.

[At the request of an esteemed correspondent we have pleasure in inserting answers to the following.—ED.]

1. What is the meaning of "Canada Publishing Company," Limited?

1. A mercantile house trading under the above name and style, as a Joint Stock Company with limited liability. Thus, if the Company becomes insolvent, a man holding \$100 paid-up stock loses what he has already paid, and is liable for not more than \$100 besides.

Journalize following:

2. Drew on A. D. McCaul, at 30 days' sight, for \$120. Had the draft discounted at the bank; discount off, \$1.50; with proceeds I bought a draft on the Molson's Bank, Toronto (exchange $\frac{1}{8}$ %), which I remitted to H. Calder on account.

2. H. Calder, Dr. \$118 35

Interest and discount. 1 65

To A. D. McCaul.. \$120 00

3. Sold James Jones goods from store valued at \$750. Received in payment his note at 6 months, which I discounted at the Merchants' Bank at 6 %; discount allowed, \$22.50; proceeds remitted to W. Muir in part payment of my note due this day for \$1000.

3. (a) Bills receivable Dr. \$750 00

To merchandise. \$750 00

suck the blood of the living ; a species of South American bat.

P. 266. Substitute other expressions for : "Means of getting warmth," "had recourse to," "are accustomed to crawl," "solitary retreats," "mustered courage," "determining to content himself."

P. 267. Put suitable words instead of the following, making any necessary changes in the context: approach, crevice, suspected, creature, refuge, visible, descended, escarpment, polished, distinguish, vaulted, vision, grottoes, approachable, horizontal.

P. 268. Write short notes on the following sentences: "Some living thing—thin, rough, flat, cold, slimy—had twisted itself round his naked arm, in the dark depth below." "A second form—sharp, elongated, and narrow—issued out of the crevice, like a tongue out of monstrous jaws."

P. 269. What is meant by "Agony when at its height is mute"?

P. 271. "The mass sank to the bottom of the water. The monster was quite dead. Gilliatt closed his knife." State your opinion of these closing sentences.

CONTEMPORARY LITERATURE.

The Week of April 19th contains the usual short, crisp editorials and interesting correspondence. Lives of "Eminent Canadians," which have recently appeared, have been well written and attractive. *The Week* deserves the cordial support of Canadians.

"SAN FRANCISCO Commerce" is the title of an article by Capt. Merry, President of the Chamber of Commerce in San Francisco, in the April *Overland*. Another important article is that on "Dairying in California," by the owner of the largest dairy farm in the world.

THE Library Magazine contains some two hundred pages of excellent reading matter, chiefly selected from the great English reviews and magazines. This magazine is greatly improved. Its contents are well selected, and the form, typography, etc., are neat and attractive.

THROUGH the courtesy of Dr. Irving Watson, Secretary of the American Public Health Association, we have received copies of the four Lomb Prize Essays. They are sanitary literature of a most valuable kind. Mr. Lomb, for 1888, offers two prizes of \$500 and \$200 respectively, for essays on Practical Sanitary and Economic Cooking, adapted to persons of moderate and small means.

America, the new Chicago magazine, sends out a good first number. It aims to be independent, patriotic and progressive. Among the contributors are Charles Dudley

Warner and Frank R. Stockton, the latter of whom contributes the first instalment of one of his inimitable stories. James Russell Lowell contributes a poem on "St. Michael the Weigher."

THE Illustrated London News, one of the best illustrated papers in the world, publishes in every number beautiful pictures on subjects of public interest. In the numbers for April 7th and 14th much attention is of course directed to events and incidents occurring at present in Germany. But the articles and news are always worth reading. Mr. Black's new story, "The Strange Adventures of a House-Boat," is another attractive feature.

THE American Magazine presents its readers with a genuine spring number, contributed to by Edgar Fawcett, Margaret Lawless, Julian Hawthorne and others. Several pretty poems appear, two of which are on "Mistress April," and "The Resurrection," respectively. A new serial story by Mary Agnes Tinckner is begun. The Medical Department, The Portfolio, Timely Topics, etc., add to the value of the magazine.

THE current number of the *English Illustrated Magazine* (Macmillan & Co.) is well up to its usual high average. The chief feature is perhaps Mr. Wright's article on "The Spanish Armada," with its curious illustrations. Two delightful series, "Coaching Days and Coaching Ways," and "Glimpses

of Old English Homes," are continued. Professor Minto's serial story and "Et Cætera," by Mr. H. D. Traill, also appear.

THE *Popular Science Monthly* for April is brimful of interesting matter. To our Canadian readers the article which will perhaps prove most interesting is one by Sir William Dawson, of McGill College, on "The Earliest Plants." Professor Huxley's article on "The Struggle for Existence," is of more than passing interest. He really discusses in it the questions of the necessity of providing a thorough technical education for the working and business classes in England. This topic is certain to come to the front sooner or later in Canada, as there is a widespread feeling that our schools all tend to direct our boys and girls into the professions and away from the farm and workshop.

THE RIVERSIDE LITERATURE SERIES. Nos. 33, 34, 35. Longfellow's Tales of a Wayside Inn. With Introduction and Notes. No. 36. Sharp Eyes and other papers. By John Burroughs. Boston: Houghton, Mifflin & Co.

THE OXFORD AND CAMBRIDGE LOCAL EXAMINATIONS IN ARITHMETIC. Being the Arithmetic Papers set in the Oxford and Cambridge Local Examinations, Junior and Senior, for twenty-six years. Third edition. 2s. 6d.

ANSWERS TO THE ABOVE. By Richard Oscar T. Thorp, M.A., late Fellow of Christ's College, Cambridge, and Examiner to the College of Preceptors. Fourth edition. 2s. 6d. London: William Rice.

An exceedingly convenient and valuable collection of questions in arithmetic.

THE NEW STYLE VERTICAL WRITING COPY BOOKS. By John Jackson, F.E.I.S., F.S.Sc. London: Sampson Low, Marston, Searle and Rivington.

Upright penmanship is more legible and uniform, and we think more quickly acquired than the sloping hand. Jackson's Series (eight books, 2d. each) is an excellent one and sure to become popular. The press in England, professional men, and many School Boards and examiners give strong testi-

monials in its favour. The publishers will send specimens free on application.

INTRODUCTION TO CHEMICAL SCIENCE. By R. P. Williams. Boston: Ginn & Co.

The author, who is instructor in chemistry in the English High School, Boston, has aimed at producing a text book suitable for use in High Schools—simple, practical and inductive, rather than exhaustive. The book possesses considerable merit.

TWELVE ENGLISH STATESMEN: (1) WILLIAM THE CONQUEROR. By Edward A. Freeman, D.C.L., LL.D. 220 pp. 2s. 6d. (2) CARDINAL WOISEY. By Professor M. Creighton. 226 pp. 2s. 6d. London and New York: Macmillan & Co.

This series, if we mistake not, will be an historical portrait gallery in which those who love to read and study history will spend many profitable hours. Mr. Freeman's is a master's hand, and though perhaps the strictly impartial and unromantic may not find themselves always in sympathy with him, much is to be learned from this, his last biography. Professor Creighton's book is a singularly able and life-like portrayal of the life and work of the great Cardinal.

ARMY PRELIMINARY EXAMINATION PAPERS, 1882-1887. London and New York: Macmillan & Co.

These Papers are set on the following subjects:—Arithmetic, algebra, Euclid, geometrical drawing, geography, French, English dictation. Answers are given to the mathematical questions. They will be found useful by teachers and examiners.

LECTURES ON BACTERIA. By Prof. de Bary, of the University of Strassburg. Second Improved Edition. Authorized translation by H. E. F. Garnsey, M.A. Revision by I. B. Balfour, M.A., M.D., F.R.S. London: Henry Frowde. New York: Macmillan & Co.

A number of Prof. Bary's lectures were delivered at the University of Strassburg as a connected series, others were first given with the object of bringing under the notice of an audience composed of scientific men, medical and non-medical, the present state

of knowledge and opinion on this subject. The lectures are especially valuable as presenting in a true scientific spirit a general view of this branch of natural history in its connection with other branches, and as such we commend them to the attention of our readers.

Library and Prize Books.

- (1) DICK'S DOG. By Ascot R. Hooper. Edinburgh: W. P. Nimmo, Hay & Mitchell.
- (2) WATER BABIES. By Charles Kingsley. London and New York: Macmillan & Co.
- (3) HERR BABY. By Mrs. Mo'esworth. *Ibid.*
- (4) CUCKOO CLOCK. By the same. *Ibid.*
- (5) CHRISTMAS CHILD. By the same. *Ibid.*
- (6) TWO LITTLE WAIFS. By the same. *Ibid.*
- (7) US. By the same. *Ibid.*
- (8) THE WILLOUGHBY CAPTAINS. By Talbot Baines Reed. 5s. London: Hodder & Stoughton.
- (9) COST WHAT IT MAY. By Emma Hornibrook. 3s. 6d. *Ibid.*

It is often a decidedly difficult matter to get prize-books suitable for young children, which shall be neither dull nor foolish. (1) is a collection of good short tales which would do admirably. Any child who has not read the late Canon Kingsley's beautiful story has a great pleasure in store (2). Of Mrs. Molesworth's books (3-7) which are not, we think, very well known in Canada, we can speak most favourably. Her insight into child-life, her knowledge of children's thoughts and ways, and her beautiful style, which an English authority compares to that of George Eliot, combine to make her books alike pleasant and profitable reading. (9) is a story of Cavalier and Roundhead times,

narrating the fortunes of an English family in 1645. For more advanced pupils, this would be a good prize-book. (8) The boy who is not delighted and excited over this book will be hard to find. It is a capital story, interesting and animated in style, thoroughly sound in sentiment.

COMPANION TO THE WEEKLY PROBLEM PAPERS By the Rev. John J. Milne, M.A. 340 pp. London and New York: Macmillan & Co.

Intended for scholarship men and for the junior members of universities reading for mathematical honors, this volume aims at taking up points passed over with little or no attention in the standard mathematical text books with which the author assumes that the student is thoroughly acquainted. We have already had the pleasure of speaking of the previously-published works of this accomplished mathematician, and can only add that he has now placed within the reach of students and teachers a weapon which, in skilful hands, will do good work.

PSYCHOLOGY. THE COGNITIVE POWERS. By James McCosh, D.D., LL.D. New York: Charles Scribner's Sons. Toronto: William Briggs.

The student of the "new science," as Psychology is sometimes called, has already a somewhat extensive literature to call to his aid; to that literature the present work, by a well-known and highly-esteemed author, is no inconsiderable addition. It is characterized by perspicuity, profound knowledge, and large Christian common sense from first to last page. A brief introduction defines and clears the way, and the main portion of the volume is divided into three books: (1) The Presentative Powers; (2) The Representative Powers; (3) The Comparative Powers. Educators will enjoy this book.

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