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THE CANADA
EDUCATIONAL MONTHLY
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MAY—JUNE, 1879.

UNCONSCIOUS TUITION.*

BY unconscious tuition I mean that part of a teacher's work which he does when he seems not to be doing anything at his work at all. It has appeared to me that some of the most nutritive and effective functions of an instructor are really performed while he seems least to be instructing. To apprehend these fugitive and subtle forces, playing through the business of education with such fine energy, and if possible to bring them within the range of a practical dealing and discipline, is the scope of my present design.

The central thought of my doctrine assumes that the ultimate or total object of the teacher's profession is not the communication of knowledge; or even, according to the favourite modern formula, the stimulating of the *knowing faculty*, if by the knowing faculty we understand a faculty quite distinguished and separate from the believing faculty, the sensibility, and the will. It has been generally admitted, for a long time, that education does not consist in inserting facts in

the pupils' memory, like specimens in a cabinet, or freight stowed in the hold of a ship. But not only must we dismiss those mechanical resemblances which liken the mind to a storehouse, a museum, or a library; we must also carry our conception of learning above the notion of an agile and adroit brain. Education does not consist in provoking bare intellectual dexterity any more than in presenting ascertained truth to the intellectual perceptions; or in both together. Education involves appeals to faith, to feeling, to volition.

In a word, education is not the training of the mind, but the training of the man. Being the discipline of an organized subject, it is organic in its own nature. No analytical classification can partition off the elements of humanity like the ingredients of a soil. Even of a tree we cannot rear a single branch independently of the other, unless we kill the others back by violence. One-sidedness has been the vice of all systems of education hitherto, and every legitimate advance

* Abridged from a Lecture by the Right Rev. F. D. Huntington, Bishop of Central New York.

has been an approach to the recognition of the unity and indivisibility of the educated being as a living and infinite soul.

Let us proceed, on the ground of this principle, with our proper theme. My main propositions are these three: 1st. That there is an educating power issuing from the teacher, not by voice or by immediate design, but silent and involuntary, as indispensable to his true function as any element in it. 2nd. That this unconscious tuition is yet no product of caprice, or of accident, but takes its quality from the undermost substance of the teacher's character. And 3rd. That as it is an emanation flowing from the very spirit of his own life, so it is also an influence acting insensibly to form the life of the scholar.

I. I remind the teacher of a fact which I presume may have been some time disclosed to him, in his dealings with almost any truth in its more secret relations, viz., that all true wisdom involves a certain something that is inexpressible. After all you have said about it, you feel that there is something more which you never can say, and there is a frequent sensation of pain at the inadequacy of language to shape and convey—perhaps also the inadequacy of the conceptions to define—that secret and nameless thought which is the delicious charm and crown of the subject, as it hangs, in robes of glory, before your mind. Any cultivated person, who has never been oppressed by this experience, must be subject, I should say, to dogmatism, pragmatism, conceit, or some other belittling infirmity. Where the nature is rich and the emotions are generous, there will always be a reverential perception that ideas only partly condescend to be embodied in words.

I am not pretending that in the ordinary processes of juvenile instruction one often arrives at any such im-

pressive expansion of thought, or any such intensity of feeling. Of course a class in spelling, a recitation in arithmetic, the grammatical corrections in an exercise in composition, the daily discipline of three-score boys and girls, will seldom raise those vast and reverential sentiments. My purpose here is simply to show that some of the deepest and most powerful impressions are made on our minds, independently of any spoken or written words, by influences, by signs, by associations, beyond any speech. And this point lies close to my argument. You know the remark they used to make about Lord Chatham: 'that everybody felt that there was something finer in the man than anything he ever said.' We are taught, and we teach, by something about us that never goes into language at all. I believe that often this is the very highest kind of teaching, most charged with moral power, most apt to go down among the secret springs of conduct, most effectual for vital issues, for the very reason that it is spiritual in its character, noiseless in its pretensions, and constant in its operation.

Besides, I do undertake to say, only by the way, that in the teacher's profession, as in every other, we are not to judge of the possibilities or the limitations of the calling by its common aspects or its everyday repetition of task-work. I protest against the superficial and insulting opinion that in the education of children there is no room for the loftiest intellectual enterprise, and no contact with divine and inexpressible wonders. Any teacher that so judges his vocation by its details belittles it. The school-room, no less than the laboratory, the studio, or the church itself, opens upward into God's boundless heaven. Each of the sciences has moral relations, and terminates in spiritual mystery. And when you

awaken a feeling of that great truth in your pupil by the veneration, the earnestness and the magnetic devotion of your own mind, you have done him a service no less essential to the completeness of his education than when you have informed his understanding of certain scientific facts. Arithmetic, for instance, ascends into astronomy, and there you are introduced to laws of quantity which make the universe their diagram, to the intellectual magnitudes of La Place and Newton, to the unsearchable empire of that religion which feels after the God of Arc-turus and the Pleiades. The rules of grammar are only intelligible formulæ that lie on the outmost boundary of an inexhaustible study. And the government of your pupils, what is it but the faint and erring endeavour to transfer into that little kingdom you administer the justice and the love which are the everlasting attributes of the Almighty himself, applying them even here to immortal souls? Let us not wrong the dignity of such an employment by denying its connection with things unspeakable.

I return, however, to the direct path of my subject. And while I maintain that the scholar ought by all means to learn, from the sympathies of the teacher's spirit, that every study he follows is intertwined with moral obligations, and is related to a divine source, in ways which no text-book does or can lay down, I proceed to more specific statements. It is not in respect to particular branches of instruction, but in respect to what we may call *the moral power of the teacher's own person*, as something indeed in which the right action and the best success of *all* kinds of instruction are bound up, that I affirm the necessity of this unspoken and unconscious influence.

If we enter successively a number of school-rooms, we shall probably discover a contrast something like

this. In one we shall see a presiding presence which it will puzzle us at first sight to analyze or to explain. Looking at the master's movements—I use the masculine term only for convenience—the first quality that strikes us is the absence of all effort. Everything seems to be done with an ease which gives an impression of spontaneous and natural energy; for, after all, it *is* energy. The repose is totally unlike indolence. The ease of manner has no shuffling and no lounging in it. There is all the vitality and vigour of inward determination. The dignity is at the farthest possible remove from indifference or carelessness. It is told of Hercules, god of real force, that “whether he stood, or walked, or sat, or whatever thing he did, he conquered.” This teacher accomplishes his ends with singular precision. He speaks less than is common, and with less pretension when he does speak; yet his idea is conveyed and caught, and his will is promptly done. When he arrives, order begins. When he addresses an individual or a class, attention comes, and not as if it were extorted by fear, or even paid by conscience as a duty, but cordially. Nobody seems to be looking at him particularly, yet he is felt to be there, through the whole place. He does not seem to be attempting anything, elaborately, with anybody, yet the business is done, and done remarkably well. The three-fold office of school-keeping, even according to the popular standard, is achieved without friction and without failure. Authority is secured, intellectual activity is stimulated, knowledge is got with a hearty zeal.

Over against this style of teacher we find another. He is the incarnation of painful and laborious striving. He is a conscious perturbation; a principled paroxysm; an embodied flutter; an honest human hurly-burly. In his present intention he is just as

sincere as the other. Indeed he tries so hard that, by one of the common perversions of human nature, his pupils appear to have made up their minds to see to it that he shall try harder yet, and not succeed after all. So he talks much, and the multiplication of words only hinders the multiplication of integers and fractions, enfeebles his government, and beclouds the recitation. His expostulations roll over the boys' consciences like obliquely-shot bullets over the ice: and his gestures illustrate nothing but personal impotency and despair.

How shall we account for this contrast? Obviously there is some cause at work in each case other than the direct purpose, the conscious endeavour, the mental attainments, or the spoken sentiments. Ask the calm teacher—him who is the true *master*—master-workman, master of his place and business—ask him the secret of his strength, and he would be exceedingly perplexed to define it. Tell the feverish one that his restlessness is his weakness, and he will not be able to apply an immediate correction. What are we obliged to conclude, then, but that in each of these instances, there is going on an unconscious development of a certain internal character or quality of manhood which has been accumulating through previous habits, and which is now acting as a positive, formative and mighty force in making these boys and girls into the men and women they are to be? And it acts both on the intellectual nature and the moral; for it advances or dissipates their studies while it more powerfully affects the substance and tendencies of character.

Now there are different organs in our human structure which serve as media for expressing and carrying on this unspoken and unconscious influence, so that it shall represent exactly what we are. That is, to atone for

the defects of language, and mor over, to forestall any vicious attempts we might make at deception, the Creator has established certain signs of His own which shall reveal, in spite of our will, the moral secret.

One of these is the temper; or, rather, that system of nervous network by which temper telegraphs its inward changes to the outward world. The temper itself, in fact, is one of the ingredients in our composition most independent of immediate and voluntary control. Control over it is gained by the will only through long and patient discipline; and so it is an effectual revealer of our real stuff. It acts so suddenly, that deliberation has not time to dictate its behaviour; and, like other tell-tales, it is so much in a hurry that an afterthought fails to overtake the first message. It lets the hidden man out and pulls off his mask. This temper is doing its brisk publishing business in every school-house. No day suspends its infallible bulletins, issued through all manner of impulsive movements and decisions. Every pupil reads them, for there is no cheating those penetrating eyes.

Another instrument of this unconscious tuition is the human face. There is something very affecting in the simple and solemn earnestness with which children look into their elders' faces. They know by an instinct that they shall find there an unmistakable signal of what they have to expect. It is as if the Maker had set up that open dial of muscle and fibre, colour and form, eye and mouth, to mock all schemes of concealment, and decree a certain amount of mutual acquaintance between all persons, as the basis of confidence or suspicion. All the vital spirits of brain and blood are ever sending their swift demonstrations to that public indicator. It is the unguarded *rendezvous* of all the imponderable couriers of the heart.

It is the public playground of all the furies or imps of passion. If you come before your pupils, after dinner, your countenance gross and stupid with animal excess, do you suppose the school will not instinctively feel the sensual oppression, and know Silenus by his looks? A teacher has only partially comprehended the familiar powers of his place who has left out the lessons of his own countenance. *There* is a perpetual picture which his pupils study as unconsciously as he exhibits it. His plans will miscarry if he expects a genial and nourishing session when he enters with a face blacker than the blackboard. And very often he may fail entirely to account for a series of rapid and sympathetic progress, which was really due to the bright interpretations and conciliatory overtures glancing unconsciously from his eyes, or subtly interwoven in the lines of frankness and good-will about his lips. The eye itself alone, in its regal power and port, is the born prince of a school-room. He answers a score of questions, or anticipates them by a glance.

Another of these unconscious educatory forces is the voice; the most evanescent and fugitive of things, yet the most reliable as a revealer of moral secrets. The voice, I mean, now, not as an articulate medium of thought—that would be its *conscious* function, and that we here expressly set aside—but the voice as a simple sound, irrespective of syllables, and by its quality and volume, by tone, modulation, wave and cadence, disclosing a disposition in the heart. I have no doubt that the unexplained reason why some persons remain strangely repulsive to us, in spite of our resolute efforts to overcome the aversion, may be owing to some uncongenial quality betokened only in the tones of the voice. And it is familiar how the magic of a euphony,

made musical and gracious by pity and love, wins wonderful convictions. I remember hearing a thoughtful person, of fine moral intuitions, who had been a little tormented by the eccentricities of a man of genius, say that all his annoyances vanished before the marvelously affecting pathos with which this odd visitor spoke the single word *Good-night*.

Still another of the silent but formative agencies in education is that combination of physical signs and motions which we designate in the aggregate as *manners*. Some one has said, "A beautiful form is better than a beautiful face; but a beautiful behaviour is better than a beautiful form. It is the finest of fine arts. It abolishes all considerations of magnitude, and equals the majesty of the world." A treatise that should philosophically exhibit the relative proportion of text-books and mere manners, in their effects on the whole being of a pupil, would probably offer matter for surprise and for use. The young, quite as readily as the old, detect a sensible and kind and high-hearted nature, or its opposite, through this visible system of characters, but they draw their conclusion without knowing any such process, as unconsciously as the manner itself is worn.

Manners also react upon the mind that produces them, just as they themselves are reacted upon by the dress in which they appear. It used to be a saying among the old-school gentlemen and ladies, that a courtly bow could not be made without a handsome stocking and slipper. Then there is a connection more sacred still between the manners and the affections. They act magically on the springs of feeling. They teach us love and hate, indifference and zeal. A noble and attractive everyday bearing comes of goodness, of sincerity, of refinement. And these are bred in years, not moments. If lofty sen-

timents habitually make their home in the heart, they will beget not perhaps a factitious and finical drawing-room etiquette but the breeding of a genuine and more royal gentility, to which no simple, no young heart will refuse its homage. Children are not educated till they catch the charm that makes a gentleman or lady.

There is one kind of education, too, which has never yet perhaps had exact justice done it under any system, which must be carried forward by this indirect and pictorial method. I mean the imagination: that genial, benignant, Divinely-given faculty. By express tuition you can do almost nothing for it, and what you do you will be likely to do wrong. But unconscious forces within you will stimulate it. And how richly it rewards such nurture!

Just think of the dull, stupid scholars in every school; the poor brains that text-books torment; the sad, pitiable dunderheads, with capacity enough for action perhaps by-and-by, but dismally puzzled for the present by these mysteries of geography and fractions. What a jubilee to them is the day they find an animated and vital teacher, who teaches by all the looks and motions and heart-beats and spirit of him, as well as by those dreary problems and ghastly pages. There is no grade of intellect that this highest learning of the soul does not reach, and so it is a kind of impartial gospel, uplifting "glad tidings" to encourage despair itself.

II. It is time, then, to pronounce more distinctly a fixed connection between a teacher's unconscious tuition and the foregoing discipline of his life. What he is to impart, at least by this delicate and secret medium, he must be. "No admittance for shams" is stamped on that sanctuary's door. Nothing can come out that has not gone in. The measure of

real influence is the measure of genuine personal substance. How much patient toil, in obscurity, so much triumph in an emergency. The moral balance never lets us overdraw. If we expect our drafts to be honoured in a crisis, there must have been the deposits of a punctual life. To-day's simplest dealing with a raw or refractory pupil takes its insensible colouring from the moral climate you have all along been breathing. Each day recites a lesson for which all preceding days were a preparation. Our real rank is determined not by lucky answers or some brilliant impromptu, but by the uniform diligence. For the exhibition days of Providence: there is no preconcerted colloquy—no hasty retrieving of a wasted term by a stealthy study on the eve of the examination.

It is in the experience of most teachers, I presume, that on certain days, from first to last, as if through some subtle and untraceable malignity in the air, the school-room seems to have fallen under the control of a hidden fiend of disorder. There is nothing apparent to account for this epidemic perversity. All the ordinary rules of the place are in full recognition. The exercises tramp on in the accustomed succession. The parties are arranged as usual. There are the pupils, coming from their several breakfasts, bringing both their identity and their individuality; no apostasy or special accession of depravity, overnight, has revolutionized their natures; no conspiracy out of doors has banded them into a league of rebellion. Yet the demoniacal possession of irritability has somehow crept into the room and taken unconditional lease of the premises.

How is such a state of things to be met? Not by direct issue; not *point blanc*. You may tighten your discipline, but that will not bind the volatile essence of confusion. You may

ply the usual energies of your administration, but the resistance is abnormal. You may flog, but every blow uncovers the needle-points of fresh stings. You may protest and supplicate, scold and argue, inveigh and insist, the demon is not exorcised, or even hit, but is only distributed through fifty fretting and fidgeting foams. You will encounter the mischief successfully when you encounter it indirectly. What is wanted is not a stricter sovereignty but a new spirit. The enemy is not to be confronted but diverted. That audible rustle through the room comes of a moral snarl, and no harder study, no closer physical confinement, no intellectual dexterity, will disentangle it. Half your purpose is defeated if the scholars even find out that you are worried. If a sudden skilful change of the ordinary arrangements and exercises of the day takes the scholars, as it were, off their feet; if an unexpected narrative or fresh lecture on an unfamiliar theme, kept ready for such an emergency, is sprung upon their good-will; if a sudden resolving of the whole body into a volunteer corps of huntsmen on some etymological research, the genealogy of a custom, or the pedigree of an epithet, surprises them into involuntary interest; or, in a younger company, if music is made the Orphean minister of taming savage dispositions again, then your oblique and unconscious tuition has wrought the very charm that was wanted; the room is ventilated of its restless contagion, and the Furies are fled.

Or if, as is more than probable, the disorder was in the teacher himself; if the petulance of the school all took its origin in the disobedience of some morbid mood in the master's own mind or body, and only ran over, by sympathetic transmission, upon the benches, so that he saw it first in its reflection there, of what use to

assail the insubordination by a second charge out of the same temper? His only remedy is to fall back on the settled spiritual laws of his being. He must try to escape out of the special disturbance into the general harmony. He must retreat, in this emergency of temptation, into those resources of character, principle, affection, provided by the previous and normal discipline of his soul.

On the other hand, you sometimes find yourself taken up into those lofty moods where you feel gifted with an unwonted competency. You are equal to all encounters then. Your spiritual atmosphere is bracing and elastic. Every opportunity offers itself, like an instrument, right end first. The school-room that day, and all the planet, is under your feet. The recitations take the pitch of your own will; your sentences of explanation come out round and clear, like golden drops. Your steps are the march of a conqueror. Impediments are annihilated. Order is spontaneous. These elevated and depressed moods serve as high and low water-marks to show the sweep of the tidal vibration. But neither the one nor the other is produced by a direct volition. They come by indirection. The springs that produce the ebb and flow lie back of all proximate causes, among the more comprehensive laws of character. And when your state is most free and effective, you feel that the best effect, after all, is not so much exerted by intention as by some involuntary spirit of felicity possessing you. Your success is due not to specific undertakings at the moment so much as to an unconscious influence acting through your person as its organ, a motive to itself. The same thing is revealed to us if we fix our attention on that common word, good-nature. Good-nature is one of the school-teacher's benignant forces. And it is a force at once unconsciously

exerted and slowly acquired or kept; a reservoir, not a spout or an April shower.

Something analogous takes place in the purely intellectual part of our nature. And this is best illustrated by those acts of the mind which are creative or inventive. A subject that you labour painfully to unfold at one time, at another time unfolds itself. The thing you spend a whole discourse in trying to say without getting it said, after all, says itself in a dozen natural words.

The question is a practical question: Are these occurrences the anomalies they appear, or are they subject to a secret law? Was the final and unexpected elucidation of the theme in no way indebted to the previous exercise? Or, was the clarified mental faculty, when the nebulous conception came out into strong, sharp light, the result of no foregoing discipline, or immediate and determinable cause, affecting the health of the brain? Is it certain that the "dark days" at school are totally inexplicable phenomena, and inevitable? Or can those other days of liberty and joy never be created at will?

It is my belief that these instances I have cited are simply extreme examples of a force which runs through all our life, the force of a funded out unreckoned influence, accumulated unconsciously, and spending itself through unconscious developments; in other words, that these special moods, whether dense or rare, which appear to come and go without our control and without law, are yet the result of causes pertaining to the regular growth of character. I believe that whenever psychology and physiology shall come to be as exactly understood as the mathematical relations of astronomy, one of these freaks of temperament may come to be as confidently predicted as an eclipse of the sun.

III. My third and final point is that, as the unconscious tuition emanates from the inmost spirit of the teacher's life, not by accident or careless caprice, but in real accordance with the antecedent growth and quality of his character, so it is the most decisive energy moulding the interior life of the scholar. The whole divine economy, as respects our constitution, renders it impossible to detach the power of a man's speech from the style of his personal manhood. If there is a moral ingredient in the business of education at all, then, as with other institutions that affect society, the question is paramount: What is the quality, temper, life of the speaking man? Personal relations, friendships, sympathies, clasped hands, answering eyes, touch, symphonious heart-beats, constitute the chief charm and privilege and joy of existence. We can easily conceive of all the bare *matériel* of instruction being conveyed into a school-room through a mechanism of pipes in the wall, or maps let down by pulleys, and its discipline administered by a veiled executioner, no heart-relations being suffered to grow up between teacher and taught. Into what sort of a bleak degradation would a generation be reduced by such a machinery! Yet every teacher approaches to that metallic and unilluminated regimen who lets his office degenerate into a routine; who plods through his daily task-work like the tread-wheel wood-sawing horse in the railway station shed, with no more freshness of spirit than the beast, and no more aspiration than the circular saw he drives; who succumbs to the deadening repetition, and is a virtual slave, yoked under bondage to the outside custom of his work. All sorts of human service are more or less exposed to be paralyzed by this torpor of routine; but no intellectual profession stands in more peril of coming under the blight of it than that of the

teacher, partly for the reason that the same lessons recur, and partly because of the distance of attainment separating the preceptor from the pupil.

The world is full of proofs of the power of personal attributes. In most situations—in none more than a school—what a man *is* tells for vastly more than what he *says*. Nay, he may say nothing, and there shall be an indescribable inspiration in his simple presence.

There is a touching plea in the loyal ardour with which the young are ready to look to their guides. In all men, and in women more than in men, and in children most of all, there is this natural instinct and passion for impersonating all ideal excellence in some superior being, and for living in intense devotion to a heroic presence. It is the privilege of every teacher to occupy that place, to ascend that lawful throne of homage and of love, if he will. If his pupils love him, he stands their ideal of a heroic nature. Their romantic fancy invests him with unreal graces. Long after his lessons are forgotten, he remains, in memory, a teaching power. It is his own forfeit if, by a sluggish, spiritless brain, mean manners, or a small and selfish heart, he alienates that confidence and disappoints that generous hope.

I would say to all teachers—if I may here express my sense of the unity of their office, in its true interpretation, with my own as a minister

in the Church—we have been touching here the most sacred issues of our common duty. It is felt, I believe, more and more every day, by all instructors who do not insult and profane their high calling by mere frivolous or mercenary dispositions, that the saddest perplexity they have to meet is the right moral management of their charge. Would to God we might help one another in that profoundest study! On your intellectual harvest, notwithstanding the inequalities in gifts, you can rely with comparative assurance, in return for your fidelity. But when you approach the child's conscience and spirit, you confess the fearful uncertainties that invest that mysterious and immortal nature. What we are daily sowing in self-discipline we shall reap in the failure or success of our work. If we would mould the living sculpture we must first fashion our implements out of purity, simplicity, love, and trust.

But no system of education is complete till it concerns itself for the entire body and all the parts of human life—a character high, erect, broad-shouldered, symmetrical, swift; not *the mind*, as I said, but *the man*. Our familiar term, "whole-souled," expresses the aim of learning as well as any. This is the manhood that our age and country are asking of its educators—well-built and vital, manifold and harmonious, full of wisdom, full of energy, full of faith.

LETTERS ON THE EDUCATION AND EMPLOYMENT OF WOMEN.

BY AGNODICE.

LETTER II.

DEAR CLYTE,—I have before me your letter, ending with the words :

“The homely sympathy that heeds
The common life our nature breeds ;
A wisdom suited to the needs
Of hearts at leisure.”

The quotation is a very beautiful one, but not, I think, to the point. I am only demanding fuller employment and a greater sphere of activity for women who, like myself, have no “needs of hearts at leisure” to supply. Married men and women are placed in a wholly different position ; close companionship and mutual help and sympathy are essential to their well-doing and being ; the one can do nothing without the other. Let married women, then, cultivate “homely sympathy” as much as they will ; let them be “Marys in the House of God, and Marthas in their own” if they like, only let them not look upon the small domesticities of life as the all-important duty of life, but rather strive after the daily culture of mind and brain.

It is not, however, their duties and opinions that I wish to discuss with you now. I want to make you understand the disabilities of the Great Unemployed amongst women ; to consider how sad is that condition of things by which thousands of active, capable young women are shut out from work, and even the higher

branches of education, by usage, habit and prejudice. That I am not speaking without good ground for complaint I will prove to you by one instance among many. There is a school in England which, centuries ago, was endowed for the purpose of educating a certain number of boys and the like number of girls. Look at that school now ; many hundreds of boys annually leave its precincts prepared for college life or to enter any of the learned professions. Of the girls, some poor twelve are given that kind of education which will enable them to become maids of all work ! Why is this ? Can we answer the question in any other way than by saying that this is the result of men looking after the interests, so *dear to them*, of their countrywomen. We are asked : Who will have your interests so much at heart as your brothers, fathers and husbands ? We point to this school, and to many similar institutions, as proof of the fallacy of this argument.

I perfectly agree with you when you say *à propos* of my becoming a student of medicine, that most women would prefer consulting a male physician to a female. You say the individual sympathy given by a woman is not so grateful to most patients as is the idea that their doctors look upon them as mere machines out of order ; clocks whose works require looking to and brightening up. But then this objection belongs only to

the present period, when women are novices at their work. Remember, many things which appear incontrovertible, are such for their age only, and must yield to others which, in their age, are equally so.

More important is your objection that women are not sufficiently accurate, nor do they possess nerve enough to enable them to succeed in the medical profession. The want of nerve, and the inaccuracy you complain of, I believe to be chiefly due to the education they receive, and to the inherited effects of generations passed under circumstances carefully calculated to prevent habits of self-control and strength of nerve.

Girls in boarding-schools are never taught method in any way; none of their studies lead them to be exact. They are taught routine as essential to the education of a properly brought up young lady, but in such a way that they abhor it, and come home intensely relieved to be able to throw it aside with their atlases, histories, and grammars. Moreover, they mix up routine with method, and think that a systematic person must lead the life of a mill-horse, eternally the same thing at the same time. As long as Euclid, Algebra, and Logic are excluded from the finishing-school repertory—as long as young ladies are not expected to be reasonable any more than a master-cook is expected to dance well—so long will they find it painfully difficult to fit themselves to be clerks or architects, or to fill any other position that requires business-like habits and nice calculation.

With regard to nerve, we cannot expect women to attain to any great control of themselves till little girls are encouraged to lead the same outdoor life as little boys, to take the same interest in beetles and dormice, tame rabbits, and guinea pigs. A child who has been accustomed to feed and care for numerous pets, to

whom the habits and ways of insects and reptiles are explained, will never scream at the sight of a mouse or faint on account of a bat. "Punch" tells us woman's sphere (fear) consists of rats, black beetles, toads, worms, spiders, and such like things, but that would not be true if girls were made to take as much interest in the colours and markings of a frog, a snail, or a caterpillar as they are in those of a flower.

If it were not taken for granted in society that young ladies *must* be frightened at such things, they would learn to exercise some control over their nerves, and not scream at the pulling of a bon-bon, or cry out when a pistol is fired.

I do not want such rough teaching as some young girls had at a school a few years ago, where a lady lecturer vivisected a rabbit and a lobster in their presence. This is perfectly needless cruelty to the animals, and outrageous to the feelings of the girls. Teachers and parents might however do very much for their pupils and children by looking upon every foolish display of excitement as a fault, and thus teach them self-management at a comparatively early age.

Every one knows how most women are worse than utterly useless at an accident of any kind; how they fly about aimlessly, faint and shriek, and how much calmness and steadiness on the part of a woman may do not only directly but also by way of example to others. But we must not expect our women to be ready for great emergencies when they cannot sit unmoved when a door is slammed or a dog barks suddenly. Truly it has been said that "there must be more vigour and strength in the bearer than in the burden, and the great thing we want now is a sounder education for our girls. We can afford to give up many of the "coxcombs of education," which will be far better replaced

by a more solid form of mental nourishment; by a food which will strengthen and elevate the brain, and fit the student for other positions of life than those now allowed to her.

It surely cannot be necessary to teach every girl music and singing whether she have or have not a taste for it, and certainly much pain would be spared musical persons if young girls were not set to play "Rippling Rills" and "Cascades" very indifferently in every drawing-room, or encouraged to disturb air-currents by appeals to rivers to bear them far away, or laments about weary hearts and sad longings after yesterday. Also, why should they be taught drawing, unless they show a decided preference for it? Who does not shudder over a school-drawing, and who cannot see in fancy the tower, very black, with a perpetual flock of birds hovering over it, the water-fall very chalky, a few heart-shaped leaves in the foreground, no aerial perspective, and very little middle distance, so that objects have to be described in these manufactures as—that mountain on the right, or the clouds, trees and brick wall on the left.

When a girl has left school she generally frames one drawing—the best—the one with the blackest trees and chalkiest sky; and the rest are put away in a portfolio, never more to be disturbed in their smudgy abode till she have children of her own who are amused at what Mamma did when she was young.

Then again, are German and Italian always absolutely necessary acquirements? Many girls never see Germany and Italy, and if they did, going once or twice through 'Otto' or 'Ahn' will not have helped them much in making themselves intelligible to the natives.

If you could carry on a conversation with a German or Italian by ask-

ing them—"Where is the hat of your cousin?" or "Have you seen the pen-knife of my neighbour?" the knowledge of modern languages that is acquired at an ordinary school would be most useful. But unfortunately foreigners have not the craving to know about "the watch of the mother," or "the dog of your brother" that grammars and conversation books would lead one to expect.

If some of these accomplishments (a very bad name, by-the-by, for nothing is accomplished by them) were left out, there would then be plenty of time for the study of the more exact sciences, which—and this position I think no one will dispute—are more likely to come in useful in the everyday life of an individual than a little music, a little drawing, and a little smattering of several languages.

Dear Clyte, in your letter you speak of Woman's Mission; may I ask you what you mean by that term? The word mission is very much abused in our everyday talk, and people generally have an extremely vague idea of its true meaning. I take it to signify the express thing a person is sent to do, the actual end of their living and being.

This reminds me of a picture exhibited some few years ago in London, which bore the title mentioned above. It was evidently very highly thought of, as it was well hung, and a small crowd of admirers was always to be seen in front of it.

I must describe it to you. It was divided into three compartments, in order to define very clearly the duties of woman as a daughter, wife and mother. In the first, a young girl was bending over a very infirm and much-decayed old man who reclined in a huge arm-chair. She was paying him some small attention, such as picking up his handkerchief, opening his snuff-

box or handing him a paper-knife. I forget at this moment which of the *duties* of a daughter she was just then performing; at all events she looked very pleased about it, and he seemed very much pleased; a fact, I am afraid, which tells against the daughter, as the old man was evidently unaccustomed to that kind of thing. In the next division of the picture, the husband was walking about a small grass plot in a great state of depression, and frowning heavily. I much fear the butcher's and baker's bills had just come in, and he had been "found wanting," for there was nothing in the picture to help one to guess what was the actual state of affairs in the family. The same young girl, now a wife, was leaning on his arm and apparently endeavouring to console him with promises that she would try and do with a leg of mutton less a week, or something of that sort. In the third compartment the young mother was represented in a flower-garden, teaching a small child to walk. Now what I claim about this painting is that all these acts were very pretty and graceful, but the chief actor in it could not be said to be fulfilling a mission. Will even you admit for one moment, if you seriously think on the subject, that any creature with a God-given soul, with reasonable and imaginative faculties, can make it her mission, the end and aim of her existence, to pick up any number of pocket-handkerchiefs for fathers, to coax husbands when they are ruffled, or to act the part of a walking-chair to an infant.

I do not wish to underrate the necessity and kindness of these trifling

everyday performances, but I mean to affirm that they are the incidents, not the events, of a thinking woman's life. She will not, I believe, the less care for her father, husband or child, because she studies sciences, investigates truths, or endeavours to cultivate her mind to the best of her ability.

In another generation I believe and hope another state of things will be in existence, that is if women will only be true to themselves and labour unselfishly against the prejudices of the majority. Then, just as we wonder now at the condition of thousands under the old feudal laws, so will posterity marvel at the position women endured during the enlightened nineteenth century.

Prof. Agassiz says, in one of his works—"Whenever a new and startling fact is brought to light in science, people just say 'it is not true;' then that 'it is contrary to religion;' and lastly, 'that everybody knew it before.'" It is the same when the question is one of social reform; the change comes so gradually that its working is almost unperceived till we suddenly awake to the fact of its positive accomplishment amongst us.

"The old order changeth, yielding place to new,
And God fulfils himself in many ways."

With new modes of thought, with fresh ideas of Science, we require new hands to handle and fresh minds to work, for as the Great Teacher has told us—"New wine must be put into new bottles: and both are preserved."

Your sincere friend,

AGNODICE.

AN ON-LOOKER'S VIEW OF "PAYMENT BY RESULTS."

BY THE REV. GEO. BRUCE, B.A., ST. CATHARINES.

OUR educational system is a good one, indeed we are fond of saying that it is the best in the world, and it would, perhaps, be no easy matter to show that such a statement is beyond the truth.

It may seem, therefore, an ungracious task to seek for defects in it; but it is in no spirit of fault-finding that the following remarks are made; rather do I speak freely because of the conviction that the system can safely bear the most fearless investigation, and because, from its general excellence, defects are very apparent, and the necessity for their removal is the more evident.

The principle of "payment according to results" is familiar to every one at all acquainted with the working of our High Schools and Collegiate Institutes. It is a principle that seemed to promise well; theoretically it contains much to commend it, and very little to which exception can be taken.

Nothing could be more just, on the one hand, or more full of encouragement, on the other, than that schools should be rewarded according to the work done by them. Schools worthy of assistance would thus be encouraged or sustained, and institutions *effete* and unnecessary would gradually disappear, and thus the law of nature, "the survival of the fittest," would come into operation with its usual results. This, I repeat, seems on first sight, to be beyond doubt, the best way in which it is possible to award Government assistance so as to secure the ends for which it is given.

But, in carrying this plan into practical operation, two questions of crucial importance came up at once. In the first place what are the "results" which are to be considered in estimating the value of the work done? And, in the second place, what means shall be used to discover how far these results have been attained?

The attempt to answer these questions practically has brought about a state of things which is, in many ways, exceedingly unsatisfactory. It is true that schools, like everything else, should be valued according to their efficiency, and that encouragement should be so given as to reward faithfulness and stimulate activity on the part of teachers. It is also true that one of the best means of judging of the presence of these qualities is an examination of the work which has been accomplished, in other words by results; but it is manifest that results which are to form the basis on which the efficiency of our educational institutions is to be judged, should be the richest and best fruits of educational training. This should be so because, in stamping them with approval, special encouragement is given to those influences and methods of work by which these results are most readily produced, while at the same time the functions and modes of work specially adapted to the production of other results which have been passed over are discouraged, and in comparison discountenanced, because, so far as official recognition is concerned, they become of small value, being fruitless.

It is evident that a serious mistake here will be fatal to the scheme. Now, it so happens that the results which we desire to attain by means of our educational institutions, the results which, in their aggregate presence, fill up the meaning of the word "education," are very difficult to handle. They elude our grasp, and set at defiance all attempts to weigh or to measure them. It is true that approximations can be made, which are extremely valuable for certain purposes, and when taken under certain conditions, but they are only approximations after all, and approximations in which the coarser and more external, the least valuable, elements are gathered, while the best are necessarily often imperfectly estimated, or not estimated at all. We have no sieve fine enough to retain them, and in the strong-handed winnowing for "results," upon an examination-day, they are blown away among the chaff. That which is discovered and retained is valuable; that which is not may be even more valuable. In fact it is a practical impossibility, under the circumstances, to arrive at a full and correct knowledge of the extent to which a student has attained an education, in its best and real significance, by set formal examinations; and, in saying this, I am far from speaking against examinations as a means of mental training, and as a means of a very valuable kind of discovering the value of the instruction of the teacher and the ability and diligence of the pupil. The statement I make is that it is impossible, in this way, to gain a full or reliable knowledge of the value of the *educational benefit* communicated and received. That the case is the more serious from this fact, that the elements which are not brought into the estimate are probably of far greater value than those which are, is apparent. Such being the case, what is the outcome of our present system? Sim-

ply this: Determining to award prizes according to results, and being unable to attain to any satisfactory estimate of the results most truly valuable, we confer our rewards on the lower, because more tangible, results; *i.e.*, we reward according to the number of pupils who can pass certain examinations, who have simply been, by any means, put into temporary possession of the required number of facts in the line of the examinations. Of course, in the preparation for these examinations a certain amount of training is given; but it is narrow, superficial, unnatural and strained. It has the essentially vicious principle in it of leading teachers and pupils alike to work from *wrong motives*, and the really worthy results are mere accidents, of which the student becomes possessed almost unknown to himself—while, of the noblest results of education, the opening up of his mind, the kindling of the desire for knowledge, and the expansion of his whole being in the presence of new fields of thought, of these it is almost impossible that he can become possessed through such means, because these results have to do with *motives* and *desires*, not with the memory of facts and the knowledge of the peculiarities of an examiner.

The mistake is in making certain examinations, notably the intermediate examination, the test, practically the sole test, of the efficiency of a school, and in still farther aggravating the evil by making the number of pupils who pass these examinations the measure of the success of a school, and in giving it rank and reward accordingly. From what has been stated it will be at once evident that trustees and teachers of High Schools are compelled to bend all their energies to the manufacture of students who can pass these examinations, and that the effects of the process on schools, teachers, and pupils, beyond

this, are looked upon as of the least possible importance, since they are of no practical value. The system of teaching technically known as "cramming" is severely and almost universally condemned, but what is the sense of condemning a thing on the one hand, and encouraging it on the other? To reward a school according to the number of pupils it can "cram" through the intermediate examination, and condemn it for turning its attention to the process by which this can be most successfully accomplished, is like training a retriever to bring game to you and then scolding him because he brings it. Suppose prizes were offered at Lloyds' to the vessels which carried the greatest number of passengers across the Atlantic in the shortest time, one would read with surprise of captains and engineers being reprimanded for taking a large number of passengers on board and running under a high pressure of steam. There might be officers who valued the lives and comfort of their passengers more highly than the inducements held out in the foolish and criminal arrangement, but no thanks to the arrangement. And if, in the competition which arose among vessels, and under the influence of placarded results of the numbers landed in Liverpool or New York every half-year by each vessel, owners learned to employ captains who were *successful*, only one result could be looked for. So long as the system continued in force, seafaring men would be compelled to accept the situation, no matter how much against their judgment, or else abandon their occupation.

One may hazard the statement that the present system is contrary to the judgment of many of the best teachers and of those who stand highest even under its requirements. They do what they can for their pupils, knowing all the time that they are compell-

ed to disregard their best interests. They know that the blade, carefully ground, will carry its fine edge through the four years of a University course, and in the longer conflict of life, far better than the one which has been too quickly reduced to a temporary sharpness, with the loss of temper and the presence of clumsy proportions which will cause the waste of many an hour of golden opportunity. But the cry is, "How many blades can you turn out in six months that can cut a hair?" The answer is, "As many as any other factory." And the steam is turned on, the grindstone strikes fire from the untoward steel, a turn or two on the emery wheel of examination papers, a touch on the oil-stone, and, Presto! the thing is done. No matter how many have been ruined in the process, or how the sinews of the workman who must use the tool may be strained, payment is according to the number that can shear through the Intermediate, and proportional honour to the school follows.

The effect upon the profession of teaching is not good; it is *degrading*. I use the word *technically*, although it would scarcely be wrong to use it in its ordinary moral meaning. Men who are capable of holding the position of teachers in our Collegiate Institutes and High Schools are worthy of being entrusted with the performance of their work. Thoroughly educated, many of them men who have chosen teaching as a life profession, men who have become enthusiastic in the pursuit of their departments of science or literature, men who could hold corresponding positions with honour in Rugby or Harrow. Let us fancy Dr. Arnold reduced to the necessity of holding his position on such grounds, or even of having his work estimated according to such a standard, would the efficiency of the institution be thereby advanced? There is something unpleasant in the thought of a

teacher holding out inducements, pecuniary or supplicatory, to boys to attend his school, acting like a parliamentary whip on the night of a division, or like a trainer who holds the bridle with a firm grasp, lest some one, who has come within sight of the Intermediate, "bolt" at the first hurdle, and leave the school minus the only tangible credit for the work expended on him.

Another feature is that an unfair discrimination is made in favour of the larger schools as compared with the smaller and less influential ones. Large schools and institutes are generally in wealthy municipalities. They can offer inducements to pupils in the form of prizes and bursaries, so that the best students are naturally attracted to them by these inducements, as well as from the superior excellence of the schools themselves. The number of pupils well advanced in their work is thus very large in these schools at the opening of the session, and comparatively little is required to fit them for the examinations on which so much of the character of the school depends. But the students who thus appear to the credit and honour of these institutions have been attracted from smaller schools in which the greater part of the work of their preparation had been faithfully and efficiently done, by one or two teachers, under great disadvantages. These schools are thus impoverished, despoiled of the legitimate credit for their work, shorn of the glory which should have adorned their brows, that the heads of a few Samsons, already powerful by reason of their massive locks, may be loaded with additional splendour.

The influence upon the pupils of a condition of things in which the passing of certain examinations bulks so largely as the important work of the school, is not good. There is a fever-

ish alternation of hope and despondency too much like "chill fever" to be healthful or good for the constitution. *Quinine* is the ordinary remedy for the bodily ailment, and nature has in store for the other tonics quite as bitter and results quite as hurtful to the mental constitution. The worst is, that in place of an awakened appetite and thirst for knowledge, the very thought of study becomes distasteful. Books are like druggists' powders, and mental languor and lethargy succeed the malarial fever.

Of one thing more it is almost unnecessary to speak, it is so obviously the result of all this—an undignified and unpleasant rivalry among schools. Not an honourable competition in excellence of work, with time and ultimate results to tell the story, but a narrow spirit of jealous watchfulness is developed—at least such is the tendency of the system. The schools are like professional scullers, with their eyes on one another's shells, and their ears open to the applause from the shore as they pass and repass one another. And there is no end to the race, it is a succession of *sprints* which inevitably wear out the strength, exhaust the patience, and destroy the health, developing suspicion and distrust on the one hand, and habits of educational piracy on the other.

Looking at the question in the light of the effects produced, we naturally return to the question as to whether we are wise in allowing examinations, with all their valuable influences when properly used, to fill such an important place. Success in an examination hall proves ability and work, but the opinion of many of the highest authorities is borne out by results in the examination of actual life, that it is unwise, to say the least of it, that one of the most important departments of our system of education should be built upon ground so unreliable.

READING IN OUR SCHOOLS.

BY JACQUES.

AMONG the subjects taught in our schools, there is none that deserves more, but receives less, attention than Reading. This is no doubt partly owing to the fact, that our, in many respects, excellent educational system overlooks the importance of a subject that does not help the pupil to pass a written examination.

To discuss this question fully would require more space than could be devoted to a single article, so we shall confine ourselves for the present to the consideration of two points: (1) The importance of Reading as an accomplishment; (2) Some of the reasons why so many scholars in our schools are poor readers.

What accomplishment is there that gives more pleasure than good reading? But, how few in Ontario think of that! In every large school in the United States there is a teacher of elocution; but there are not at present in Ontario ten schools where reading is taught by one who has made the subject a specialty. Neither do parents recognize its importance; for while they willingly devote time and money to have their children taught music, they seem never to think that, of the two, Reading is the more valuable accomplishment. There are comparatively few who can become musicians, but almost every one can learn, yes, can teach himself, to read well.

Again, while there is one person who is really interested by good

music, twenty are pleased and instructed by good reading. Who has not often noticed at a musical and literary entertainment, that while the reading is going on, conversation ceases, but as soon as the music begins, the majority of the audience seem to think that the time has come for exchanging nice bits of gossip? We do not desire to decry music; we would encourage it in every way. It is refining, it is inspiring. But every one has not the gift of either singing or playing well. Where there is one who succeeds in learning to play or to sing well, there are twenty who, with even a less amount of practice, can learn to read so well that it is a pleasure to listen to them. "Eloquence charms the soul, song charms the sense."

Another advantage to be gained from reading aloud is that "the voice culture" necessary for this gives a delightful charm to the voice in conversation. What fascination we feel in listening to a good reader! What new meaning we see in some oft-told tale, when we hear it from the lips of an able elocutionist! The history of her time tells us that when Elizabeth Fry would go and read to the criminals in Newgate the parable of the Prodigal Son, the noblest in the land were glad to stand in that cold and dismal prison, by the side of felons and murderers, to share with them the privilege of witnessing the marvellous pathos which genius, taste and culture could infuse into a simple story.

The man who is a good reader possesses a power which no other art or accomplishment can give him. In every situation in life it is of use to him. In the school, in the public meeting, in the social circle, in the nursery, a good reader can comfort, amuse, and give pleasure. If, then, Reading is of so much importance, why is it that there are so many poor readers? One reason for this state of affairs is that the *teachers themselves cannot read well.*

Now, we know that it is quite possible for a person who cannot sing very well to teach others to make more music than he can himself. So it is in reading. A teacher, who cannot himself read very well, can, by careful and judicious criticism, help his pupils to read more than passably well. But too often the teacher looks upon reading as one of the unimportant subjects, as one which requires little or no study at home. He will carefully prepare his problems in arithmetic and make notes of the points in the grammar lesson that he wishes to bring out, while the 'Reader' is never looked at until the class is called up; and then he will open the book, and reclining in his chair, listen to scholars saying over words, and correct them only when some flagrant mispronunciation is made.

To teach a reading lesson well, the teacher should be familiar with his lesson. He should have some well-defined plan of the manner in which the lesson ought to be taught. He should know clearly the meaning intended to be conveyed by the author, and be prepared with questions calculated to rouse the attention of his class and fix the lesson on the mind of each pupil.

Secondly: *The matter of the lesson is beyond the comprehension of the pupil.*

We often hear scholars labouring over "Belial's Address," or "Thanatopsis," without understanding the

meaning of a single sentence. This, of course, produces in the child a distaste for his lesson, and instead of his reading being a useful and pleasure-giving exercise, it becomes hateful drudgery. Let the teacher then select a lesson that the child can comprehend and then read this over to the class carefully, sometimes enunciating passages incorrectly, and teach his scholars to criticize the various renderings given.

Again, *The lesson is often too lengthy.*

A class is sometimes permitted to read five or six pages at a lesson and then only once over. And this is done as hurriedly as if the child's well-being depended on getting through his book in the very shortest space of time possible. The effect of such a course is to make the pupil lose all interest in this branch of study. A page or two at the most is quite sufficient for a lesson. The piece should be read in sections, every word defined, and the whole lesson carefully reviewed.

Again, *Children read after the teacher, having no more intellectual drill than if they were parrots.* How often we hear such a sentence as, "*It is an ox,*" drawled out "*It—is—an—ox.*" Many teachers seem to have the idea that there is no use in teaching simple sentences with a view to anything more than the pronunciation of single words. They think that it is time enough to teach reading when the pupil is in the Fourth Book. This is a great mistake. If the pupil is correctly taught the sounds of the vowels and consonants, the work is half done. The scholars will grow up to be good readers, because from the outset, they are taught to think what they are doing; they are taught to be natural. But how often we hear scholars who, when asked to read a selection, pronounce the words in a monotonous voice, and in a dull dispiriting manner, while not a thought of the meaning enters their minds!

What a waste of time such reading is! And it all arises from the fact that the pupils, at a time when most susceptible of influence, contracted a habit which will cling to them more or less during their whole lifetime.

Many teachers think that they cannot improve in elocution because they have never taken lessons from a Professor of the art. Of course it would be a great help to them if they could do so; but in reading, as in other things, the student must be his own instructor. The chief requisite of a reader is common sense. Almost any one who thinks what he is doing, and will put himself in the position of the person whose words he is repeating, can teach himself to read well. He can find, in books on elocution such

as those written by Prof. Bell, Prof. Lewis of Toronto, or Prof. Andrews of Montreal, many hints and rules which, if thoughtfully applied, will enable him to improve in elocution far more than he would believe until he gives the plan a fair trial—a fair trial, we say; spasmodic efforts will avail nothing.

For example, suppose that a person's articulation is faulty. Prof. Andrews gives the following advice: "Let a sentence be selected and the pupil subjected to the following drill: (1) Utter every element separately. (2) Utter every syllable separately. (3) Utter every word separately. (4) Read the sentence in a loud whisper."

This rule, the writer of this article knows, has been beneficial to him.

THE PRIMARY SCHOOL IN CHINA.

HOW often have we been told, on examination days, that we were to be the men of the next generation; that some of us would be merchants, some lawyers, some doctors, some ministers; that perhaps there were even among us some who would sway the destinies of the nation! And our young minds, imbued with the belief that knowledge is power, have resolved to acquire knowledge at whatever cost. So too the Chinese youth. It is his ambition to be a scholar, for learning is the passport to the highest official positions in the Empire. For more than a thousand years appointments to government offices in China have been nominally on the results of competitive examinations. So it is the ambition of every father to send his son to school as soon as he is able to speak plainly, and if he gets on well with his studies no expense will be spared on his education. The remarkable fact, however, is, that with

this universal desire for education on the part of the people, and the high value set on it by the rulers, there is no public school system. All elementary schools are originated and maintained by private enterprise.

School-houses are seldom built for the express purpose on a carefully chosen site, with due attention to everything conducive to the health and comfort of the pupils, as with us. A large room such as might be used for a small store is rented either by the teacher or the parents wishing to open a school. In the windows where the merchant would display his goods are screens of white cotton or paper to keep the children from looking out and the passer-by from looking in. In this room, which is never well ventilated, the pupils are kept pent up from morning till night, in violation of all the laws of health, and one might almost say of humanity too. The floor is usually of clay, hard packed and often

black with dirt and dampness—sometimes of large square red earthen tiles. The furniture consists of a table about four feet long and two wide, with two drawers in it for each two of the scholars, at which they sit on high benches without backs, like milking-stools with long legs. Tables and stools are provided by the pupils, and are their personal property, to be taken with them if they should be removed to another school. It is perhaps a significant fact that the drawers in which the pupils' books and stationery are kept, are almost always provided with locks. The teacher's table and stool differ only from the pupils' in being larger and generally of a little finer manufacture. The walls, which are rough-plastered, are ornamented with long strips of gaily coloured paper—about five feet long by a foot wide—pasted up or mounted on rollers like our wall-maps, and hung up, on which are written in free running hand (almost unintelligible to any one who does not know what the sentence is) wise saws and auspicious sayings from the ancient Chinese classics, very much as school-room walls here are decorated with mottoes and texts of Scripture. The ceiling is of bare rafters, and the strips of pine about three inches wide and four or five inches apart, on which the tiles are laid on the outside, may be seen if the whole has not been blackened by the smoke and dust of years. Most school-rooms are dark, damp and dirty, but not in these respects much worse than the homes from which the children come, and are often a good deal better.

The teacher is not so easily described, there being so many varieties of the species. It is hard to select an average one, though you can easily distinguish him from all other kinds of men. He has a lazier and more swaggering air than the merchant, but not so lofty a swing as the petty official.

He wears stockings and shoes *always*, which distinguishes him from the farmer and labouring men and most mechanics, who wear them only on occasion. Over all his other clothes, good or bad, the long particoat-like coat which comes down almost to the ankles, and which is nearly always made of fine grey cotton or shirting dyed blue. On his head is a little skull cap, with the appearance of which everybody is familiar from pictures, and in summer when he ventures out of doors, which is seldom if the sun is shining or rain falling, he sports a gay umbrella. If at all up in years, whether he needs them or not, he usually wears spectacles, and almost invariably smokes a brass pipe, so constructed that the smoke is drawn through a compartment filled with water before it reaches the mouth. Smoking by the teacher is not out of order in school hours. The teachers are for the most part men who are preparing for the Government examinations, or who have already failed once or twice, or several times, in passing them. It is no unusual thing for a student in China to be "plucked" at his final. Success, indeed, on the first trial, is rather the exception than the rule.

The pupils are even a more miscellaneous lot than the teachers. Urchins of all sizes and shapes, but all with clean shaven heads and the inevitable queue. Nothing is to be seen of them all day, but early in the morning shortly after sunrise, and late in the day just as the sun is going down, they are to be met everywhere on their way to and from school, with their books and copy-books stuck in their belts, which are made of a long band of blue cotton simply wound once or twice round their persons and the ends tucked in, for though their hours are so long *in school* they are still supposed to burn the "midnight oil" at home. They are all boys (*no girls ever attend school*), but it

must not be supposed they are like Canadian boys. They are far more like little old men. There is almost an entire absence of the life and mischief of our boys, which helps so much to relieve the tedium and monotony of their school days. But they wouldn't be boys if they hadn't their games and playthings. One of their favourite amusements is kite-flying, at which they are very expert, sometimes succeeding in flying them so high as to be nearly, if not quite, out of sight. They sometimes pitch *cash* (the name given by us to the Chinese copper coin—value one mill), which is very much like pitching coppers here, and they have a game, of which they are very fond, which is played with small pebbles something like jackstones. Tops they have in large variety of size and construction, and the little fellows spin them very dexterously. The rage for tops is infectious, just as it is here, and when it spreads knots of little fellows are to be seen in all sorts of places spinning away as busily and earnestly as if their lives depended on it. But these, it will be noted, are all very quiet, lazy games. Bull-in-the-ring, cat-after-the-rat, prisoner's-base, hide-and-seek, base-ball, cricket, running, jumping, and othersuch games are unknown. But it would take a little book to describe the Chinese boy.

The school exercises are exceedingly monotonous. The *two* things that are taught are reading and writing, at least till the pupil is 16 or 18 years old, when, perhaps, he goes to a higher school or takes private lessons from a tutor. Not even arithmetic is taught, and the majority leave school incapable of making the simplest calculations, and having no more idea of the geography of the world than we have of that of the moon. Reading occupies the whole forenoon of each day, and is taught by each pupil, without any division into classes, at his own seat "studying out loud," bawling out

sentence after sentence of the book he is reading in a sing-song tone, sometimes louder and sometimes not so loud, the din of the school rising and falling accordingly. Sometimes it is perfectly hideous, worse than Bedlam can possibly be or have been. The teacher seems to enjoy the noise. It would set a Canadian teacher mad in an hour. And the worst of it is, the children for the first five or six years have no idea of the meaning of what they read. To read well is to rhyme off page after page of their fantastic and grotesque looking "characters," without hesitation or mistake. About the only people who really understand what they read are the teachers and officials. An ordinary Chinese youth may be quite familiar with one or two thousand "characters" or words, so as to name them at sight though their shape gives very little clue to their proper sound and less to their meaning, but so ignorant of their meaning as not to be able to understand the few books he has perhaps been reading, and re-reading for years. And this is what is called education! Most of the pupils leave school before they have passed this stage. Those who remain go on to a more rational and thorough course. Writing being a more mechanical operation, is taught more rationally. The boy is armed with an ink-stone (being a piece of slate or marble, say four inches long by three wide and an inch thick, and slightly hollowed on its surface, with a little trough chiselled out in it at one end to hold water), a stick of what we call Indian-ink, and a small cylindrical brush of wild-cat's or camel's hair, with a fine point, and a copy-book of fine, very thin bamboo paper. The first half of the afternoon is given to writing. The end of the stick of ink is dipped in the water and rubbed on the stone till a few drops of ink about the consistency of thin cream are produced. In this the point of the pen

is dipped and the writing begins. The first copy-book has the "characters" printed on it in red ink. These the pupil traces carefully over. When he has had a few weeks, or months, of such practice as this, the teacher writes him a copy, which he places underneath a page of his copy book. The writing shows quite plainly through the semi-transparent paper, so that its outline is easily traced. When the boy's hand grows steady, and he comes to have some command of his pen, he is allowed to write from a copy as youngsters do in our schools. Some of them, in the course of time, learn to write very rapidly and really beautifully, for a page of Chinese "characters" well written, is by no means ugly. But some of the first attempts are frightful to behold, the writing being much more intricate than ours, and the blotting capabilities of a Chinese pen being about twice as great as those of a goose quill. If the fingers are slow or clumsy they get many a rap on the knuckles from the teacher's bamboo, for corporal punishment has not gone out of date yet in the "Flowery Kingdom." The remainder of the afternoon is spent in hearing the pupils read the lessons they have learned in the forenoon. The lesson has been committed to memory, in fact, and can be read as well without the book as with it. Indeed no pupil is supposed to know his lesson until he can repeat it word for word. Thus the memory is trained and developed. It is no uncommon thing to meet with young men who, years after leaving school, are able to repeat page after page of the books they had read. The other faculties of the mind are, however, left almost entirely without cultivation by this defective, and, in many respects, absurd system of education.

The school funds are raised entirely by those who employ the teacher. The rate of the pupil varies with his attain-

ments and the reputation of the teacher. The ordinary rate is about two dollars a year for each pupil, to begin with, in addition to which he presents the teacher with about two pecks of clean rice per annum, and a dollar in "cash" for pocket money, to buy paper, pens, ink, tobacco, and other luxuries. The average teacher will earn from sixty to eighty dollars a year, *cash*, in addition to the rice and other eatables he may receive as presents. A man of high qualifications, long experience, and good reputation, may charge higher fees, and will, perhaps, have twice that income, out of which, very likely, he will have to support himself and family. No one but a Chinaman would be equal to such a task, but he can manage it nicely and perhaps have something over.

Anyone who supposes himself qualified may open a school, but if he is ignorant or incompetent his career will be short. He will be *visited* in an informal sort of way, by two or three of his neighbour teachers, who will succeed in asking him so many questions that he cannot answer that he will become the laughing-stock of his school, and before long of the community. Unless he is pretty "well up," or can turn the tables on his visitors, he will have to move on and try again, or abandon the profession altogether. By this unique process the incapables are kept pretty well weeded out. Of course, the fewer the teachers the more pupils they each have, and that means more money and more rice, and Chinese teachers are human.

It is quite apparent that the educational system of China, though hoary with age, has reached but a very imperfect development. How long it may be before one arises among them to do for their schools what a Ryerson has done for the public schools of Ontario, who knows? May it soon be! There is much need.

THE CO-EDUCATION OF THE SEXES.*

BY JOHN MILLAR, B.A., ST. THOMAS.

WITHIN a few years the subject of female education has received a large share of public attention. In nearly every country of Europe progress has been exhibited towards securing higher intellectual advantages for the female sex. The discussion, which still goes on, is not limited by distinctions arising from differences of race or creed. Christian communities are fast acknowledging the justice of woman's claims, and the reflex influence which man has felt from her improved attainments warrants continued efforts in her behalf.

In Canada the question is presenting itself at an important period in our educational history. The course of study in our High Schools and Colleges has been widened and modified to meet the growing wants of the people. The advisability of building and endowing female academies has been considered by many religious denominations. Our future position and prospects, in an intellectual point of view, will largely depend upon the policy which guides our present course of action. The course we now adopt should be one prompted by the suggestions of reason and the teachings of experience.

In this article I purpose considering a phase of the question which has been extensively discussed in the United States, England, and Continental Europe. Where and how shall females be educated, is the important matter that has developed such varied

opinions. Shall girls be taught in the same institutions as boys? I am in favour of the joint education of the sexes in the Public School, the High School, the College, and the University, and for the following reasons:

I. The system of co-education is preferable on economical grounds, since from the same expenditure of money greater efficiency will be secured. I do not attach the highest importance to this evident advantage, because, if not superior in other respects, economy alone should not settle the case. This point, nevertheless, cannot be overlooked, since the question has its practical side. With separate institutions for the sexes the cost of education will be nearly doubled if like efficiency is to be maintained. The mistaken notion that woman does not require a superior education, would seriously militate against her prospects of high attainments if the sexes are placed in separate institutions. The public would continue to neglect her wants, and the state colleges that might be provided for her training could scarcely be expected to become highly efficient. Unless provision were made by public funds, the demands of all would not receive attention. Private institutions, if established, would only answer the requirements of the wealthy, and the poor man would have no opportunity of giving his daughter the advantages of superior education. If co-education is injurious for the daughter of the

* A paper read before the County of Elgin Teachers' Association.

wealthy merchant, or professional man, is it not equally injurious for her of more humble social position? Why should not a scheme for the masses engage the attention of those who lament so loudly the evil effects of the joint education of the sexes? A system which can only benefit a class is not deserving of public support. The whole tendency of late years has been in the direction of free education. Our Public and High Schools and our national University are practically free. No man has a greater interest in having higher education accessible to all than he who is unable to pay its cost for his children. No system of education is complete that does not furnish the highest facilities for bringing to the surface the talent that may be found in all classes of the community. If higher education for women is not provided by the nation, then nine out of every ten of all the young ladies of Canada must abandon all hope of securing anything beyond the most elementary attainments. Our national system, even to the highest point of University acquirements, is the determined foe of all class distinctions. It places value on intellectual and moral worth, and on these alone. In a system of private schools and colleges, wealth is enhanced beyond its merits, and the intellectual and moral worth of the entire nation is very imperfectly developed. With co-education the country can secure, by the national institutions, facilities for enabling women to gain high attainments in every department of learning. With the separate system she can expect only schools of a very inferior character and a correspondingly inferior intellectual status.

II. Co-education furnishes greater incentives to study. Students will thus have better opportunities for observing the development of the faculties of different minds. There are some subjects that boys, as a rule, ac-

quire more readily than girls, and *vice versa*. Both sexes are, in consequence, benefited by being placed in the same lecture room. The girl who is slow in mathematical reasoning will be improved by hearing a boy demonstrate a proposition in Euclid, while her quick perception in other subjects will be of great service to the boy. Many a young woman will observe the beauty of a verse in poetry, see the force of a rhetorical figure, and grasp the meaning of an author long before a young man has discerned its depth and power. Every good teacher knows how beneficial this diversity of intellectual acumen may be made during a recitation. The best teacher does not necessarily exhibit the most elaborate explanations and illustrations. He cultivates proper methods of observation and reflection, and educates rather than instructs. He elicits from some members of his class answers to questions and solutions of difficulties for the benefit of others. Differences of mental cast powerfully assist the true educator. If the sexes are not taught together, the opportunities for employing this diversity of intellectual endowment are materially diminished. The result of separation causes each sex to form contracted views on many subjects, and to produce a one-sided opinion in many regions of thought.

III. The opponents of co-education contend, that the system is injurious to the health of girls. They say that the female sex cannot endure the same mental strain as the other, and that if girls are subjected to the same pressure as boys the health of the former must give way. Girls are, no doubt, physically weaker than boys, and if intellectual capacity and endurance are found in proportion to strength of muscle, our opponents have a plausible argument at least. Does strength of mind correspond at

all times to strength of body? Do we always find the boy who can run the fastest, or lift the greatest weight, also able to win the prize in the mental contest? Are the men of to-day who take the lead in science, literature, and politics, superior in physical strength to those who are compelled to take a place in the ranks? The superior physical power of man over woman is certainly no more strongly marked than that of some men over other men. If a girl should not be placed in competition with a strong boy, should a strong boy compete with a weak one, or a strong girl with a weak girl? If muscle, instead of brains, is to determine a system of classification, sex should be left out of consideration. Any experienced teacher knows that girls are to be found in our schools who can do an amount of mental work, without the slightest danger to their health, that would crush many boys. Application to study does not endanger health. Activity of mind, as well as activity of body, benefits a healthy constitution, while each may be carried to extremes. Some young ladies may have injured their health, and even sacrificed their lives, by too close an attention to study. Is not the same true of boys, and true in a greater number of instances?

Statistics on this matter furnish the highest court of appeal, and statistics are all against those who say that co-education is injurious to the health of the female sex. When Dr. Clarke wrote his famous book, a few years ago, to show that the joint system was destructive to the health of the female sex, his work called forth a dozen replies from eminent medical men and others. Reports from all parts of the States showed that the facts were against the Boston physician. Even Dr. Clarke, himself, was forced to admit the existence of other causes for the bad health of many American

women, such as severe changes of climate, martyrdom to fashion, late hours, perpetual excitements, and the grasping demands of the age. If co-education must take its trial for murder, it should, like other criminals, receive a fair hearing, and be allowed to call evidence in its defence. From statistics presented from Oberlin College, Ohio, the records of deaths show a more favourable percentage for female than for male students. Miss Avery, the resident physician of Vassar College, says, "the girls who studied the hardest there, were also the healthiest." The testimony from Michigan University shows that women retain the best of health while taking up the most difficult subjects of the course. The President of New York Normal School states that, "the amount of mental work which the female students perform is beneficial to their health." Professor Huxley believes that females would become physically stronger by severe study. Mrs. Garrett Anderson, an accomplished physician, the first to pass the examination of the London Apothecaries' Hall, and also the first female graduate of Paris Medical School, stated in a number of the *Fortnightly Review*, that the result of increased application to study on the part of young women would lead to a vastly improved state of health. Miss Blake, an English lady, with much English prejudice on the matter of co-education, visited and examined into the American schools a few years ago, and acknowledges that the health of females, when taught with males, does not suffer. The following remarks of a writer in a recent number of the *Westminster Review*, are very appropriate on this point: "What if the average woman is capable of less mental work than the average man? It still remains indisputable that many women are capable of much more than many men, and that the strong

women run less risk of overtaxed brains than the weak men. . . Have we never heard of the worn appearance of high wranglers and other prizemen—of energies (male energies) slackened for life because of one great strain—of Cambridge parlance about senior wranglers killing so many men who tried to keep up with them—of brain fevers and deaths among too zealous male students—of things that would give rise to fifty Dr. Clarkes if only they happened to be girls?"

Is not the health of the girls attending our High and Public Schools as good as that of the boys? Do not those girls who work hard and pass the 'intermediate' examinations enjoy as good a state of health as those who never reach that far? Much more injury is done to female health by the midnight masquerade and skating carnival than by excessive study of chemistry or of algebra. The earnest female student will exhibit the joyous laughter of true happiness, sleep soundly, and have no unpleasant dreams, while the one who has no mental stimulus, but dreamy, sham amusements, will find no tonic to remove the monotony of a dull, objectless life.

IV. Co-education will secure for females a training of a more thorough and less superficial character.

It does not follow that woman's course of study should be very different from man's because her mental characteristics are different. If a difference of sex should demand a different intellectual food, why should it not also require different physical diet? The mental, like the nutritive process, is alike for men and women. The intellectual appetite craves for the same food, and what invigorates the mind in the one sex will have a similar effect with the other. To prescribe bread and meat for man, and sweets for woman, would physically weaken and destroy the latter. Such a course would not be more absurd

than to supply boys with all the solid branches of an education and to limit girls to the so-called accomplishments. We train boys with some regard to their strong and weak faculties; with girl a different plan has been fashionable. We find woman possessing more strongly marked sensibility, acuteness, perception, and imagination, with a weaker nervous organization, and less power of reflection and concentration. The custom has been to give her such a training as will only intensify her weaknesses. She has been denied those more severe studies that would check the imaginative and emotional tendencies. She reasons badly, and therefore she must abstain from mathematics! She may lack in accuracy of thought and expression, and, of course, she must have nothing to do with mental philosophy and languages! With a nervous system, prone to ready expression of sympathy and indignation, we must take care that she can read with pleasure the sensational novel, and that alone. To educate a boy on such false principles would injure, if not destroy, his mental powers. When we train a girl so irrationally, and see the only rational result, we simply say "what a weak creature is woman!"

In condemning the defective character of woman's culture I utter no new complaint. Seventy years ago, Sydney Smith, in the *Edinburgh Review*, pointed out the utter folly of confining female education to music and drawing. Half a century afterwards, J. Stuart Mill deplored the same folly which the brilliant essayist so forcibly condemned before. Lately, Chief Justice Moss, at the University Convocation, Toronto, eloquently alluded to the false character of the education which so many were striving to give their daughters, and his remarks were quoted with approval by the press in all parts of the Province.

I am not to be understood as speaking disparagingly of music, drawing, or other subjects of that kind. I would make them not an optional but a necessary part of education. The study of music should be taught in our schools, and so efficiently, that private lessons in the subject would become something of a past age like private lessons in grammar, French, and trigonometry. The interests of woman demand, however, more than such attainments. In France, Germany, Austria, Italy, Sweden, and Russia she has passed University examinations and in many instances has been admitted to degrees. Queen's and Trinity in Ireland, and Glasgow and Aberdeen in Scotland, have, like Cambridge in England, provided University examinations for women. Our own University has moved in a similar direction and already young ladies from our High Schools have become undergraduates of that institution. The struggle for justice at Edinburgh in the matter of medical education is quite familiar. London University now admits women to all its degrees, and Harvard, the centre of the opposition in the United States to co-education, has been forced to advance with the wiser sentiment of the age. It is true Vassar College, where the playful dream of Tennyson was expected to be realized,

"With prudes for proctors, dowagers for deans,
And sweet girl-graduates in their golden hair,"

furnishes a thorough education. It should be observed, however, that whatever success Vassar has achieved has been the result of a departure from the superficial tendency of most female colleges and the adoption of a curriculum very similar to that of a good college for boys. The demand for thoroughness in England has given rise to Girton College, and its success supplies a crushing argument for those

who contend that the education of girls should be very different from that of boys. This efficient institution is only three miles from Cambridge, and is taught by the same professors as the University, and its students are examined from the same papers as those used at the degree examinations.

If these tendencies prove anything, they prove that woman should receive a thorough education as well as man. They prove still more. The University examinations for woman have proved that she has capacity as well as inclination for study. They have proved the hollowness of the culture given in many of the ladies' colleges in England. They have opened the eyes of the people to the necessity of having girls educated at schools where they may receive a thorough training. Many of the female institutions, according to the *Westminster Review*, "exist as a heritage from the past," and the death warrant of every one of them is signed. In their expiring groans they would attribute their decay to other causes than their own weakness, while many English parents find they have been paying dearly for what is only a sham and superficial gloss upon a poorly-cultured mind. Hence the agitation for a better system, and hence the tendency to co-education even in conservative England. In Scotland boys and girls have been taught together since the days of John Knox, and all attempts for separation have signally failed, and no one will say the result has injured the nation either intellectually or morally.

It is scarcely necessary to notice that when young men and women are educated together they are not obliged to take the same subjects. The principle of options or elections which has been wisely adopted in the curriculum of our High Schools and in that of all good colleges completely meets the contingencies arising from different mental inclinations and ob-

jects in life. The differences in subjects for the proper mental development of the sexes will be found very few. In Boston the course of study for girls has been made nearly the same as that for boys, and lately a meeting of head-mistresses in England unanimously favoured the opinion that Latin, so generally regarded as a boys' subject, should form the basis of higher education for females.

V. Co-education is preferable on moral grounds.

The advocates of separate institutions are often ready to admit that the other plan secures a more thorough education, and that in ladies' colleges the prevailing tendency has been towards superficiality, but they contend that womanly qualities and high moral excellence cannot be cultivated where girls are taught with boys. To say that a system is immoral in its effects forms a bold assertion, and if true, no possible advantages in other respects should justify its continuance. Are those who admit that a system promotes greater efficiency aware what follows from such an admission? Are they aware that there exists an inseparable connection between thoroughness and morality and sloppiness and immorality? Where laxity appears, there numerous other defects follow in its train. The good teacher secures efficiency by no harsh exercise of authority or incentives at variance with sound moral principles. His pupils will study from the confidence they repose in one that should be worthy of their respect. Moral influences are the most powerful agencies which a teacher can employ to promote intellectual progress. When the teacher of high qualifications knows how to use them, he cultivates moral excellence in his pupils. He must necessarily make good scholars at the same time. If he does not make good scholars the highest incentives (moral incentives) are wanting, and in a

school or college where thoroughness and efficiency are not found, there, *cæteris paribus*, the highest moral tone is wanting in the discipline and modes of instruction. Are we to understand that the best behaved pupils in our schools are not necessarily diligent? If a girl is given to frivolity, will she be improved by being placed at a ladies' college where the influence for study may be of a less potent character? Which of the hard-working girls of our schools incline to immorality? It is evident, industry in a school elevates the moral tone by giving girls as well as boys something good to think of, and an institution where careful application to study is not promoted, will also be found, if closely examined, defective in the cultivation of character.

The idea of separate institutions for women did not, I think, arise from any intelligent consciousness of a diversity in the moral development of the female mind. It is a relic of the middle ages. Priests alone at that time constituted the educated classes, and the only high seats of learning were the monasteries. When the human mind burst its shackles during the 16th century, the existing system was modified to suit the advanced requirements of the age. With the growth of intelligence grew up the great schools of England and of other lands. Soon was seen the advantage of having the other half of the race, the female sex, educated, and the secluded system was adopted. Since it had been the custom to separate man from the outside world to develop piety, it was also regarded as necessary to separate woman from association with man, in order that she might receive a better intellectual and moral training. If seclusion and separation have not tended to promote holiness, how can they produce morality which should be based on religion?

The moral influences of the sexes upon one another have been among the most powerful instruments for ad-

vancing modern civilization and refinement. True manliness is wanting in boys not favoured with the society of girls, and womanly dignity is absent in girls removed from the society of the other sex. Boys without sisters are usually less cultivated than those who, in this respect, have been more fortunate. Girls without brothers often assume a tone of conversation and roughness of manner the reverse of what is feminine. Does not each sex admire good qualities in the other? Does not each cultivate such a character as will secure the respect of the other? The young man who is ungentlemanly is not popular with intelligent young ladies. The young woman who is given to trifling, and who is deficient in womanly refinement, is not esteemed by right-thinking young men. In a well-conducted school a self-restraint is cultivated which brings out the good qualities of both sexes. Boys, when taught with girls, leave off rudeness; and the finer shadings of female character cannot be secured without the stimulus of the opposite sex. A young woman educated with young men never forgets her sex. The "strong minded" women who have brought the question of women's rights into disrepute are not the result of co-education.

Why should not our opponents be consistent and carry their principles further? Why not have separate churches for the sexes? What about the joint system at holiday parties, social gatherings, promenade concerts, etc.? The refinement in a girl's manner is generally the reflex of her company at home and after school hours. The logic of experience brings convincing arguments in favour of the superior moral results of the joint system. The evil of boarding establishments for young ladies has made hundreds of English mothers, who were trained in them, prefer a different training for their daughters. Boston now speaks of moral and social im-

provement resulting from the co-education of the sexes. Cornell University has adopted the system, and its learned President, Andrew D. White, states that modesty and womanly dignity are promoted in consequence. A distinguished writer in the *Contemporary Review* states that no institutions in the United States have a higher moral tone than the High Schools of Pennsylvania, where the sexes are taught together. The refinement, industry, and moral principle of the students of Oberlin College, Ohio, have been acknowledged, yet the system has been followed there for half a century. Antioch College has no clandestine meetings and correspondence such as often are to be found under the plan of seclusion. After nine or ten years' experience of co-education at Ann Arbor, the former opponents of the innovation admit their error. This system prevails in nearly all the Western States. Spain still clings to the secluded method; and France is only beginning to see her errors. In Italy, the birth-place of the system of separation, indications of improvement are now visible. Germany has moved slowly in this matter, and the result of her system, on the character of the people, is very suggestive. The German system has been condemned by many of the educational writers of that country. Jean Paul Richter remarks: "I will guarantee nothing in a school where girls are taught alone."

But why go out of Canada for proofs? On the co-educating principle have been trained ninety-nine per cent. of the wives and mothers that make happy thousands of happy homes. Is not the moral character high of the hundreds of young women who attend our High Schools? Is their womanly dignity inferior to that of the young women whose training costs their wealthy parents hundreds of dollars a year? Every one by viewing his own acquaintances can determine the case for himself.

EXERTION AND OVER-EXERTION.

BY T. W. MILLS, M.A., M.D., RESIDENT PHYSICIAN, CITY HOSPITAL, HAMILTON.

VOLITION—active movements—successful opposition to opposing obstacles or exertion—these are the characteristics of all the higher forms of life as opposed to mere vegetative growth or existence.

To admire such seems to be a part of our very constitution. Stagnation, inertia, laziness, are repulsive to all rightly constituted minds. We admire the man of energy, and generally give to him the prizes that, in this life, may be at our disposal. It is now a well-established fact, that mere talent, even genius, in this age of restless activity and keen competition, cannot alone avail against moderate abilities with tireless energy.

To arouse the youthful mind to exertion, to furnish ever, as the changing scenes of life unfold, new and adequate motives to activity; to direct these motives towards the noblest ends the individual is capable of; in other words, to call forth, to the fullest, the latent powers of a human being with its unknown potentialities; this, all this, is the great, the laborious, but, at the same time, the noble task that falls to the educator; and from the fact that this is virtually accomplished before the age of twenty is reached, points plainly to the part in this task that the parent and teacher must perform.

A youth may be willing to exert himself, but knows neither his powers nor the way he shall best attain the end, nor yet what goal it may be

wisest to strive to reach. The garnered experience of humanity, and of the individual teacher, must come to his aid, or his efforts will be largely wasted, and the man himself remain a comparative savage. Who does not look back over his past career and see in it, regretfully, the waste of precious strength through lack of some directing mind? Instead of the straight course to success, ours has been the "mazy round" of the hare. This is a vast and all-important subject. The writer's effort will be an attempt at a suggestive treatment of the subject as it bears on the physical being of the student; hoping that the few following hints may lead to some fertilizing thought, in the minds of the readers of this journal, at least.

If there is any one nuisance the teacher has to contend with more than another that has baffled even the most skilful, it is that of indolence in the pupil, at least, so far as the school-room is concerned. The mischievous boy, the trifler, the prattler, all are, to a certain extent, generally making progress in one of the chief aims of school life, the acquisition of knowledge; but the downright lazy fellow, he may vegetate, he does vegetate, but not in knowledge. The great problem is in such a case to ascertain what motives, if any—and such there must be, since he is rational,—what motives do appeal to him, and do, or can, call forth exertion. A visit to parents throws light on such a matter

often, a peep into the playground may even solve the problem. Can a teacher be thoroughly successful who does not study his pupils when engaged with their sports? Can there be found any more effective way of gaining the sympathy, the confidence, and the affection of pupils, than by taking an interest in just what is dearest to them? By experience it has been proved that a little time thus spent is better than an unlimited amount of argument from birch-rod impositions or the logic of cold abstractions, which are powerless with young minds because they cannot by them be fairly understood. Why expect a child to act to-day in view of a good that is perhaps twenty years off? At least, why trust to that alone; why keep to it when it fails before our eyes daily? Moreover, we run counter to nature that decrees the child, the young animal, must chiefly use its body and its senses. Now let me assume that each reader is convinced of the importance of the question here broached, for if not, then he must feel comparatively little interest in what sports do, or do not, tend to advance physical development.

In attempting to create a scientific basis on which this subject can profitably, and with a fair proportion of agreement on cardinal points, be considered, let us lay down and discuss briefly two or three propositions:

1. Inasmuch as man's being is a compound, made up of a series of systems, so far as his *physique* is concerned, it is of the utmost importance that all these parts or systems should be proportionately and harmoniously developed.

2. The highest degree of development of each, consistent with the general harmony, is desirable.

3. When a moderate degree of development of the whole system (series) is reached, it is sometimes wise to

then direct attention to the greater growth and development of some one part, in view of the position in life the particular individual may wish to fill.

The old fable of "the belly and the members" illustrates, in a popular way, the mutual relation of parts in our physical organization; but a somewhat more exact account of things will not fail to make us appreciate the matter. To repeat one or two facts now perfectly well established in physiology, and which cannot be too well understood, let me say, that the healthy growth and nutrition of a part require that:

(1.) The part itself shall be in a normal state as regards structure. Healthy blood may be sent to a cancer, but such healthy blood will there produce, not normal structure, but cancer cells.

(2.) An abundant and healthy blood supply.

(3.) A certain nerve influence.

If the main artery leading to a part be tied or the nerve cut, in the one case, death of the part will ensue from starvation; in the other, either death or serious derangement. Of course minor evils will ensue from lesser degrees of violation of the above principles.

The healthy blood is dependent on an adequate supply of food, and a healthy condition of the digestive organs, as well as of the circulatory, lymphatic and glandular systems. The nervous system soon becomes deranged when the blood is poor in quantity or quality. Witness the headache after loss of blood and the neuralgias of anæmic persons. So that, trace the matter as far as we may, the mutual dependence of one part on another is ever more and more manifest.

But simple as this is in theory, in practice it is a very complicated problem. All the efforts of the physician are, as a rule, directed to maintaining

this balance which disease has disturbed. And how often is it that there are factors in the disturbance that even the most expert and learned cannot determine. But why allow disease to become established? How does the question of exertion bear on this balance? Practically, more now than ever before, perhaps, in the history of the world. With the spread of civilization, with the greater consequent importance of each unit of humanity, competition becomes keener. No longer do men in thousands acknowledge the nod that indicates the mere "I will" of some individual. Men are not now satisfied, as a rule, to occupy "the station to which they were born;" hence exertion, hence over-exertion. The only remedy for the latter would seem to be, in the first place, more correct views of life's destiny; and, in the second, a more thorough appreciation of the laws governing our physical being.

But we must lay a little more stress still on harmony in developments. Suppose that in the individual's employment there is a special tax on the muscles; if the digestive system is weak, a sufficient and proper supply may not be forwarded to the blood—the muscles will crave for what cannot be supplied; or they will take the lion's share, while the rest of the system will suffer.

Again, is it any advantage to the nervous system, to the brain and brain-work, to attend to the development of muscle? The size of the bones is largely dependent on that of the muscles—the size of the lungs, as shown in the writer's last paper, is dependent on that of the chest—this again related to the heart, etc. Now in activity of the brain, there is a severe demand made on the blood supply—what if the chest, the heart, the rest of the frame be small? One of the very best counteractives to a

congested head is a thorough use of the muscles. To state that good brain-work is closely related to good digestion, is only to go a step further back than the blood supply, namely to the source of the blood, the food, etc. We are now in a position, it would appear, to solve an unlimited number of problems, and to draw practical conclusions from the scientific principles stated, it is hoped, in a sufficiently exact manner for the ordinary student.

It is now easy to form a correct opinion as to what constitutes over-exertion. When a single system is so much used or so violently used that it suffers, there has been over-exertion. Again, if by the excessive use of one part, any other part of the general economy suffers, there has been over-exertion.

Nature herself, by our sensations, has carefully guarded us against any form of functional abuse of a part. If, for example, each man would stop when he feels he has reached the amount that he can safely lift, there would be little danger of muscular sprain. If a part be used after the *fatigue point* is reached, there is danger of inflammation.

The ambitious student may defy the laws of nature as indicated to him in a clear enough way by unmistakable warnings to desist, and continue to use his brain till it becomes, instead of having an excess of blood passing through from natural activity, congested,—that is an excess of blood in comparative stagnation,—till this, again, may proceed to actual inflammation and possibly destroy life.

Before proceeding to draw a few practical conclusions, it may be stated that there seems to be an almost unlimited amount of adaptability, on the part of every component system of the organization, to such forms of activity as may be imposed on each. It is largely upon this fact that the "training" of athletes is based.

Take running as an instance. It would be an almost impossible task for a man, naturally adapted to this exercise, to run a mile without resting, supposing he had not run at all for a year. But by practice the muscles required seem to move in harmony and with comparative ease. This must be referred largely to a special temporary concentration of the attention on the part of the brain, perhaps, to the task, by which there is a special development in certain parts of the organ; this seems the more probable, as what is once learned is not usually forgotten, so far as forms of physical exertion go. A man who has once learned to run can never forget the art, however his muscles may weaken; such all will admit to be a fact, whatever the explanation. This leads us to lay down this practical rule: in all exercises requiring skill for their performance, begin to practice correctly, continue correctly, and gradually increase all efforts until the climax of perfection and power capable of being reached by the individual is attained. Now, this is just what is not commonly done. The youth, in his ambition, wishes so much to become *quickly* skilful, he frustrates his efforts.

What should we say of the athlete, and of a professional career as an athlete? If the principles enunciated in this paper hold, it follows that athletes, by an excessive use of the muscles, tax all the other systems unduly; consequently, unless all these related parts are not only healthy, but strong, some one, or all of them may, indeed must, yield sooner or later. It was reported that the medical man in attendance on O'Leary, at the recent great walking match in New York, stated that all parts of the man had given out; not muscles alone, be it observed. A certain class of men should not think of indulging in athleticism at all. These are: (1.) Men

of small bones, small muscles, and, especially, of small chests. (2.) Men with any one system of the body especially weak, as, for example, a very weak digestion.

If asked to give a comprehensive answer to the question, "What is the best form of exercise for children as regards their physical well-being alone?" we should reply, in accordance with the above principles, that which will lead to the fullest development of each system, and, at the same time, preserve harmony throughout. And prominent in this, as was pointed out in a former paper, would stand the development of the chest and its contained organs; hence, some form of exercise that will involve deep inspirations, is absolutely necessary.

The writer begs leave, at this point especially, to combat an opinion entertained by not a few, that so long as children exercise sufficiently in the open air, it matters little how. This is radically opposed to all sound reasoning. What is it that troubles us all through life but to bring our powers and impulses under proper control? Why, when the faculties are just starting into vigorous development, let them run into chaos by pure intent? The sooner a child's faculties are started into use in the *right direction*, the better. To say that they should be used when the infant is five years of age, for five hours a day, is another thing, which is more injurious, if not more irrational, than the belief in the merits of pure romping. To what must we ascribe the particular value of the Kindergarten system if not to its marshalling the untrained faculties of the child into order, and under the guise of play, teaching the infant to use its powers to some purpose? It may not be amiss in this paper to pass, in brief review, some of the most popular out-door sports of the day, and those trials of strength, skill and endurance, which are at present popular.

(1.) *Walking matches*, so called, which are more commonly running contests, have little to recommend them. It may be desirable to encourage so useful and universally employed a means of locomotion as walking proper, but the present so-called "walking tournaments" simply indicate the degree of the contestant's endurance, and must lead to the ruin of the individual's health in a short time.

(2.) *Cricket*, a fine game, but there is a great deal of uninteresting standing about in it; the exercise is not well divided among the players. It is in no sense, however, too violent a form of exertion.

(3.) *Base-ball*, an excellent game but for those dreadful "red-hot" balls. There is about the right proportion of running in its practice.

(4.) *Lacrosse* is a sport that we are told originated among savages, and, until it is modified a great deal, it had better have remained among savages. Everything about it is violent in the extreme; it taxes the heart and blood-vessels to the utmost. The sight of an Indian's face when in the midst of a game of lacrosse is something not to be forgotten!

(5.) But what of *boating* and *boat racing*? A pleasanter, more healthful, more thoroughly satisfactory mode of exercising cannot be found. The influence of severe rowing exercise, as in races, on the heart and larger blood vessels has been a vexed question. This much is certain: persons with any form of heart disease should never indulge in violent efforts of this kind,

or indeed, of any kind. The sliding seat has put the chest under more favourable circumstances; there is not that tendency to compression of this part in reaching forward which was objectionable, at least to a greater degree, in the stationary seat. Perhaps the man with large chest and heart, who is not of too plethoric a habit, can most safely aspire to be the champion oarsman of his locality. No form of exercise more fully than rowing develops every muscle; few, if any, are more favourable to chest development. It must have struck every observer of such matters, for even a few years, how rapidly even the best men in each department give way before younger ones. Does it not teach this lesson? Athletism wears men out quickly. This is a matter worth pondering. Digestion, nervous system, circulatory system, all suffer amid the monopolizing exactions of the muscles. There are many considerations, beside those relating to the physical development alone, that bear on the question of the choice of a sport, &c. It seems to me that this whole subject is worthy the best attention of teachers. The matter of improving our education, as it relates to the physical, is pressing on us. The writer has attempted to lay down and elucidate a few principles that may furnish ground for very wide generalizations; hoping that all teachers may turn these principles to some account as regards their own health and development, and also as regards the physical well-being of *the coming men of Canada*.

PENMANSHIP, AND HOW IT IS BEST TAUGHT.

BY R. E. GALLAGHER, HAMILTON.

HANDWRITING is not an accomplishment for the few but a necessity for all, and, hence, how it is best taught is a practical issue in practical education. There are four methods of teaching penmanship which are widely different from each other, and which comprehend all those having any hold on our modern educational system. The first we shall distinguish as the imitative; the second as the movement; the third as the natural; and the fourth as the analytic methods.

The imitative is not a modern product but still has a strong lease of life. Its central idea is that writing is a purely imitative art, and that the constant repetition of perfect models will invariably produce good handwriting. There are four main defects inseparably connected with this method. First, it suppresses all individuality. The second objection is that it calls for no special thought on the part of the pupil, and does not strengthen or bring out independent effort. It has no educating force. The third objection is that it furnishes the pupil with no gauge of criticism or comparison, and hence with no adequate guide to the construction of the letters and the improvement of his handwriting. The fourth objection is that it requires none of that vigorous energy of teaching imperatively demanded in other branches of education. This, the one only branch which is supposed by many to require no teaching at all, and this false idea that the art of penmanship can be self-taught, depending upon imitation rather than upon in-

struction, has misled a large corps of teachers to guide an army of un instructed pupils into the blind acquisition of some sort of a cramped hand writing, the result of which is that many of our business men and teachers (those especially who should write well) are suffering from it to-day.

On the other hand we have the movement method, the fundamental theory of which is, that all forms of the script character are but the result of certain free movements of the hand and arm. The natural deduction, therefore, is, that if the muscles are fully developed and carefully trained in movement, the rapid and easy execution of the script letters will flow therefrom as a matter of course. That the written forms are the result of certain laws of movement none will deny. But movement in penmanship is absolutely subservient to form. This will be apparent if we consider the identity of each of our written signs. It is the individual character of the forms and not the movement which preserves to us the identity of the letters. The pupils must have a definite objective point at which to aim, namely, the visible forms of the copy; and having been given the correct position and general directions of movement in making the particular forms, the only way by which he can educate the muscles and cultivate the movement is by continued and intelligent practice of those forms, whether it be a movement exercise or a letter.

We now come to the youngest child of modern thought in penmanship, *the*

natural method. As the child learns to walk by walking, and to speak by speaking, so he should learn to write by writing. The first spoken words of the child are feeble and incoherent. As he practises his mother tongue his articulation improves, and although entirely unconscious of the many processes involved, he learns to speak—he can express his thoughts. The first written words of the child will be in like manner feeble and illegible, but as he practises the script character, he will learn by degrees to master it, until it will become as natural and easy to write his thoughts as to speak them. Let us look at the conditions and see if the same method can be employed in both cases. Speaking does not require the use of a foreign instrument, but only the play of natural organs, and is therefore an almost instinctive process, one that is begun with the first dawn of intelligence, before the child learns to walk, much less to handle tools. Writing on the other hand requires the use of a wholly foreign instrument and materials, and is, and must be, a second step in education. The child can very easily learn to speak the simple idioms of the language, but the elementary processes of writing are so many obvious difficulties, which the child cannot escape from. The pen is not a voluble and pliant instrument like the tongue, nor is the arbitrary action of the hand at all instinctive. It requires at the start, and for a long time thereafter, perfectly conscious effort to make these written signs. The pupil must consciously guide the pen for every part of every letter. It is only when these arbitrary processes have become naturalized by practice that writing becomes the intuitive messenger of thought. The natural method precludes all possibility of a graded and progressive system. The expression of the simplest idea in writing must involve many complicated forms, and the conse-

quence is, that the pupil is thrown into deep water before he learns to swim.

I know there is a prevailing idea among teachers and others, that certain persons are born to be naturally good penmen while others are doomed to be mere scribblers their whole lives. While I admit that some children can learn to write more readily than others, I contend that every child can be taught to write well, with the proper mode of explanation, and a little encouragement and enthusiasm on the part of the teacher. In fact I am perfectly satisfied as to this, for so far as my observation has extended, I have found that half an hour per day for the short period of from three to six months, under careful instruction, a pupil who has any energy at all, though he may be what we term a "bad writer," will acquire a good legible free hand. I have seldom known it to fail.

The analytic method is the true method of teaching writing. It best interprets the science of penmanship, and reduces all its forms to a beautiful symmetry, order and progressiveness. The Spencerian system, which is now being taught by all successful teachers of penmanship, can be explained by the teacher to be better understood by the class according to the analytic method than by any other. It does not elaborate a beautiful theory of the alphabet of no practical value, but it goes back to the muscular action in producing the letter to the mind, and asks—What is the conception there? Is every part clear and distinct to the mental vision? The first step in the analytic method is to know; the second to execute. Criticism has also an important function in applying knowledge to practice and in measuring results. Here are the three educating powers in this art; *Knowledge*, informing and guiding; *Execution*, doing the work; and *Criticism*, pointing backward to

error and forward to progress. The analytic method, moreover, is not a drowsy one, inviting to apathy. It brings light, life and energy into penmanship, and stirs up the sleepers. Thought directs practice. Every line is an interpretation of an idea, and the mind thinks out what the hand executes.

Believing that penmanship is both an artistic and a mechanical science, and that the practice of a good system of penmanship has a far broader significance than that generally attributed to it; that it is not only a medium of expressing our thoughts and transacting our business, but is also, as a study and exercise, a refiner of the senses, a trainer of the eye and intel-

lect, and a stimulator of taste and order, I would urge its more painstaking cultivation in our schools.

It is said that nineteen out of twenty of our young men follow commercial pursuits. To them, therefore, a good handwriting is indispensable: it is half their battle to success in securing and maintaining lucrative employment. In fact so much importance is now attached to good penmanship, that a young man is thought unfit for business life unless he is a good penman. How desirable, therefore, that this subject should receive prominent attention in our schools, and that the best methods of penmanship should be intelligently understood.

NOTES.

1. *Passing Books and Pens, &c.*—I would recommend that the books and pens be distributed and collected at each lesson by monitors; having two monitors for each row of seats, one for the books and one for the pens. Pens should be renewed at least once a week. Good materials should always be used in the use of paper, ink, &c.

2. *Position at desk.*—A front position is the only proper position for this exercise. I would strongly recommend it to the teacher. Pupils should sit upright, without reclining against the desk, with head slightly inclined forward. The right arm should not sustain any of the weight of the body, but merely its own weight. *Let the position be as natural as possible.*

3. *Manner of holding the pen.*—Don't let the hand roll to the right. Keep the back of the hand turned up so that the pen stock will point over the right shoulder. The pen must not drop down between the thumb and

forefinger, but be kept up in place by the thumb. The wrist should be kept clear from the paper, allowing the arm and third and fourth fingers to touch the paper only. Allow them to hold the pen as naturally as possible, without contracting the fingers or the cords of the hand in any way.

4. *Teaching the beginners by counting.*—It keeps them together, gives the teacher more control, and prevents idle scribbling, and holds their attention to their work.

5. *Teaching the more advanced pupils b, muscular movement.*—Give them free-hand exercises at least once a week—keeping the fingers stationary on the pen and writing from the muscles of the arm.

6. *Criticism.*—Criticise badly-made letters on the board before the class. Compare their letter with yours, or with the copy, and point out its defects.

CURRENCY LEGISLATION.*

I. MONEY, AND WHAT IS IT?

It promotes clearness in all financial discussions to restrict the term money to those divisions of the precious metals which have the same market value, whether coin or bullion. A partial exception to these principles is found in the copper and silver coinage of small denominations, which are a legal tender only for very small sums. These are made lighter than the bullion value which their legend indicates, for the simple purpose of preventing their exportation as bullion, and securing at all times abundance of small change. Restricting the term money, as we have done, enables us to keep always in mind the radical distinction between it and all forms of credit which are used for the purpose of exchange, and which may be included under the general term "currency." Money, then, properly speaking, is a commodity, having its exchangeable value within itself.

Bank notes, bills of exchange, checks, pass from hand to hand, serve the purpose of exchange, and are properly called "currency," but the material which thus passes is in itself nearly worthless, and is simply representative of exchangeable values. Simple promises to pay money, or other commodities, at some time or place, do have an exchangeable value, but it is dependent solely upon the confidence of the purchaser of the promises in those who have issued them. These forms of credit, bank notes included, fall under the same general rules of commercial law, and depend for their commercial value, not upon themselves, but upon the trustworthiness of the promises to pay written upon them. They can never be legitimately made a legal tender for debts, or the

fundamental basis of any financial system. All credit currency is limited to the range of territory in which the makers of the promises and their trustworthiness are known.

The exchangeable value of money, let me repeat, depends not upon the stamp of the government which has issued it, but upon the weight and fineness of the metal of which it consists. It may be sold as bullion without serious loss, wherever in the commercial world it may be carried, and consequently gives its possessor the widest possible range of choice over the widest possible range of territory.

II. WHAT GOVERNMENT HAS NO RIGHT TO DO.

The most important desideratum in a coinage law, is so to fix the weight and purity of the coin, that when melted it shall as nearly as possible have the same value as bullion that it had as coin. The laws regarding coinage should, so far as possible, be determined by the estimate of the commercial world concerning the market value of those portions of the precious metals stamped as coin. Government cannot create the value on the metal coined, but it recognizes and assays it and stamps it, so that when it is used for purposes of exchange, there can be no doubt regarding the weight or purity of the pieces. It is worthy of remark, that this principle of jurisprudence here recognized, and which should condition all legislation on money and instruments of credit, was followed by Lord Mansfield in the enormous additions which he made by the decisions to the Commercial Law of England. By the study of the Roman Law, the usage of Italian cities, and the Hanse towns—by

* For the information of our readers, we publish this month a timely and well written article which appeared in a late number of *Barnes's Educational Monthly*, on the important subject of Currency, in which masters will find valuable information to aid them in dealing with questions of Stocks and Exchange.—ED. C. E. M.

the aid of expert witnesses and special juries of merchants, he mastered the whole system of common commercial usages reduced to principles and organization, and incorporated them in his remarkable decisions, which are a possession for all time.

The moment government attempts by laws or decrees to mark these divisions of the precious metals with a value greater or less by any considerable degree than the price of an equal weight of bullion in the market, it sets aside all definiteness in exchanges, and introduces an element of uncertainty in all reciprocal transfers of those rights whose values are estimated in the terms of the coinage.

Our Treasury notes, when issued during the war, represented, really, forced loans; the passing of the "Legal-tender act" was a law intended to fix the market value of these notes. After they had passed into circulation, the Treasury notes being a forced loan in the first instance, the "Legal-tender act," by requiring them to be received at their face value in payment for all existing debts, had the additional effect of a "confiscation act" to the amount of the difference in exchangeable value between specie and the Treasury note.

The right of the general government under the Constitution to make a forced loan, or to take the property and lives of the citizens for the common defence, may be conceded. When such extreme measures are adopted we can understand them, and the immediate loss, whatever it be, may be definitely ascertained. But when the "Legal-tender act" was passed, it gave to every citizen who was a debtor the right to confiscate an undefined portion of his debt at his own will. If such a debtor had made a mortgage of \$1,000 before the war, it gave him the right to cancel it by Treasury notes, whose market value might range anywhere between par and fifty per cent. of depreciation. It gave to the debtor the right to pay off his debt of \$1,000 with \$600, \$700 or \$750, according to the price of "greenbacks" measured in specie at the time when he saw fit to make the payment. We know nothing in the history

of Eastern despotism more tyrannical, more unjust, more contrary to every principle of public policy.

From China to the United States, and through thirty centuries of time, governments of all sorts have constantly interfered with money and credit, and almost universally for evil. The man who counterfeits a coin by debasing it, who alters a bank-note, a bill of exchange, or a check, is a felon in the eye of the law, in every civilized nation; but nations themselves, in their corporate capacity, have continually engaged in practices which are the same in character, criminality and result.

III. DEBASING THE MONEY STANDARD.

Down to 1355, Scotch and English money were of the same value. At this time the Scotch Government began the debasement of coin. In 1390, Scotch coin was current in England at only half its nominal value. In 1660, it was debased—according to Pinkerton—to one-twelfth the value of the English coin of the same denomination. In Germany, the original *florin* passed through successive steps of debasement till it reached one-sixth of its original value. In Spain, a gold *maravedi* contained, in 1220, 84 grains of gold, and by the end of the seventeenth century, it was debased to less than one-half the value of an English penny. The misery, injustice and immorality which these fluctuations in the coinage produced, is very inadequately set forth by the old historians and chroniclers, by reason of their want of economical knowledge; but enough may be gleaned from them to show that the evil in question may be classed properly with slavery, feudalism, and the pestilences and wars which were the chronic diseases of the body politic during a great part of the period of time to which we have alluded. Every petty sovereign guarded jealously the prerogative of coinage, with the distinct idea that it was one of the most effective means of robbing his subjects, paying the expenses of war, and maintaining his hordes of retainers.

The debasement of the standard of money below its normal rate quite generally involves the necessity of raising it again when the

debasement becomes intolerable. A sudden elevation of the standard after the period of debasement, works the same evil to the debtor class that depreciation brings to the creditor class. Governments have wrought nearly as much evil by their unwise methods of restoring the degraded standard of currency, as they have in debasing it. "The Roman citizens, being bound to pay into the imperial treasury a certain number of pieces of gold, or *aurei*, Heliogabalus, whose cunning appears to have been in no wise inferior to his proverbial profligacy, increased the weight of gold in the *aureus*, and thus obtained by a trick an addition to his means of dissipation." In the reign of Philip the Bold, in 1285, the value of French coin had been so much debased as to cause violent complaints on the part of the clergy and landholders, because of the consequent reduction of their income. To appease this discontent, and in compliance with an injunction of the pope, the king issued new coins, about three times the value of the base coins of the same denomination which they replaced. This caused terrible suffering among the labourers and the debtor classes. "The people," says Le Blanc, "being reduced to despair, pillaged the house of the master of the mint, as he was believed to have been the chief adviser of the measure, and besieged the Temple in which the king lodged."

The new coinage introduced into England in 1552, to replace the base money which had been previously issued, was more than four times the value of most of the coin of the same denomination which it replaced. It was estimated that the loss was £100,000,000 in the process.

It also produced the most violent commotions among the poor throughout England. In fact, legislative interference to restore a standard of value always produces suffering scarcely less than that occasioned by its debasement.

IV. THE DOUBLE-STANDARD FALLACY.

A somewhat similar variation in the measures of exchangeable value has often been brought about by the adoption of a double standard, consisting of gold and silver. The

theory of a double standard proceeds upon the idea either that gold and silver have naturally and always a constant ratio of exchange with each other, or that legislation on the part of one or several states of the commercial world is able of itself to establish and perpetuate such a constant ratio. But all experience proves the negative of both these suppositions. Gold and silver have never, in the history of the world, maintained a constant ratio of exchange with each other.

Herodotus gives the relation of silver to gold as 13 to 1; Pluto, as 12 to 1; Menander, as 10 to 1; Livy speaks of the relation—B. C. 189—as 10 to 1; Suetonius tells us that Julius Cæsar exchanged silver for gold in the ratio of 9 to 1. The most usual proportion among the early Roman emperors was that of 12 to 1. From Constantine to Justinian it ranged between 14 and 15 to 1. Since the discovery of America it has ranged from 14 to 1 to 17½ to 1. Between 1853 and 1876, silver varied in value, measured in gold, from 16½ to 47 pence an ounce.

During the year 1875 there were 78 different variations of the price of silver quoted in the London market. In 1876 the variations were 151; in 1877 they were 98. During this period it is probable that the variations in the price of wheat can scarcely have exceeded those of the price of silver.

Where the law gives the debtor his choice to discharge his obligations either in gold or in silver, the natural tendency is to select the cheapest form of money. This would introduce an element of uncertainty into all time-contracts, and ultimately the coinage which comes to be permanently the cheapest, measured by the legal ratio, will drive out the dearer, thus introducing practically a single coinage of the baser of the two metals.

In looking over the history of the various substances which have been used as the measures of value, we detect a tendency in commerce to pass from the use of the less to that of the more valuable material. Hence the fact, so unmistakable in the commercial world at the present time, that the drift is towards a single gold standard. Our late legislation on the "silver question" was

openly avowed to have been adopted to protect the special interests of two classes of persons—debtors and silver-miners, involving all the possibilities which we have noted, and in addition, the adoption of a ratio between gold and silver, which has made the silver dollar of the new coinage worth in the world's market from 82 to 85 cents—legislation which will not be likely permanently to raise the value of silver. Its main effect will be to enable a man who owes a debt of \$1,000 to pay it off with \$820 or \$850. This may be legal; but it is not moral, honest, or economically safe.

V. THE LESSONS FOR THE TIMES.

1. The tendency manifest from the remotest periods to pass, in the selection of the medium of exchange, or substance of money, from the less to the more valuable material—from shells, cattle, salt, skins and wheat, to iron and copper, to alloys of copper and tin, from these to silver, and from silver to gold—that is, to a single standard, and that formed out of the most valuable material adapted to the purpose of division and circulation.

2. This tendency manifests itself in different countries and ages, just in proportion to the development of commerce, and the extent of commercial transactions, and that this tendency is subject to limitation only in the case of money of small denominations, used in retail trade, in what is called "subsidiary currency," not used as the measure for large transactions.

3. As trade enlarges its area, and commodities increase in the rapidity of their movements—as the percentage of profit on single transactions tends to grow less, it becomes more and more necessary that the standard of value should be single, common and stable, not only in each nation, but throughout the commercial world.

4. A double standard involves the necessity of regulation by law of the relative value of the two substances selected for money. But all experience shows that no two commodities, subject to the law of supply and demand, can be kept by any human power at the same ratio with each other.

5. By the action of Gresham's law, the cheaper money tends to drive out the dearer money, and a double standard tends, to a limited extent, to make all the uncertainties and fluctuations incident to a debased currency chronic in any country which adopts it. Hence the slow but definite movement of public opinion and practice all over the world towards the adoption of a single standard.

6. The effect of our silver legislation is, by making legal a false ratio between gold and silver, a new Inflation act for the special protection of silver miners and debtors, and an attempt to set aside the practice and convictions and spontaneous tendencies of nearly the whole commercial world.

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THE PUBLIC SCHOOLS OF ENGLAND.

BY THOMAS HUGHES, AUTHOR OF "TOM BROWN'S SCHOOL DAYS," ETC.

From the "North American Review,"

PART II.

We have now reached the great group of Elizabethan schools, to which indeed Shrewsbury may also be said to belong, as it was not opened until the Queen had been three years on the throne. The two metropolitan schools of Westminster and Merchant Taylors' were in fact founded in 1560, two years before the opening of Shrewsbury. Westminster as a royal foundation must take precedence. It is a grammar-school attached by the Queen to the collegiate church of St. Peter, commonly called Westminster Abbey, and founded for the free education of forty scholars in Latin, Greek, and Hebrew. The Queen, with characteristic thriftiness, provided no endowment for her school, leaving the cost of maintenance as a charge on the general revenues of the dean and chapter, which indeed were, then as now, fully competent to sustain the burden. Other boys have always been taught with the foundation scholars, the number being fixed by statute at eighty; but this limit has not been observed. The scholars are elected by a system of competition called the challenge, of the nature of the old academical disputations. The candidates, generally about thirty in number competing for ten vacancies, come up by twos before the head master beginning from the lowest. The junior proceeds to challenge the other to translate some portion of Greek epigram or Ovid's *Metamorphoses* prepared for the occasion. If he can correct any fault he takes the other boy's place, who becomes challenger, and attacks in his turn. Their "helps," senior boys who have prepared them, stand by and counsel their "men," and the head master moderates, deciding the point in issue when there is any doubt as to the correctness of an answer. The boy who remains successful now challenges the candidate next in seniority, and so the struggle goes on for some six or eight weeks, the boys who are highest at its close getting the vacant Queen's scholarships. These carry them either to Christ Church,

Oxford, or Trinity, Cambridge, the heads of which colleges are on the governing body of the school, with the dean and chapter, and six laymen, four named by the Crown and two by the governing body. The monitorial system is in force in college. The four head boys, as captain and monitors, are formally intrusted with the maintenance of discipline by the head master before the whole school. The system of fagging was onerous until quite recently, so much so that its severity was noticed by the Commissioners in their report in 1864. It has since been lightened by the appointment of servants to do part of the work (such as calling in the early mornings, providing hot water, and making up fires). There is no school chapel, the boys attending the Abbey services. The hall is the room in which Henry IV. is lying sick in Shakespeare's play, and the dormitories and schools form the southern side of Dean's Yard. The playground is in Vincent Square, half a mile from the school, and the neighbourhood is not a healthy one in any sense for boys to frequent. Moreover, the headquarters of rowing, for which the school was justly celebrated, have migrated of late years to quieter and safer waters at Putney, six miles up the river. Having regard to which facts, and the constant closing in of the city, efforts have been made to remove the school out of town. These, however, have failed through the opposition of old Westminsters, fearful of breaking the school traditions and the connection with the abbey, and of abandoning the privilege which the upper boys possess of entrance to the galleries of the Houses of Parliament to hear the debates. Up to the last generation Westminster was the school of several of the great political families. Two premiers, Lords Aberdeen and Russell, were educated there, and many other statesmen; and, though this is no longer the case, the old tradition gives way so slowly that it will probably take at least another generation to transplant the school to a healthier and more eligible site.

Merchant Taylors', the other metropolitan school founded in 1560, owes its origin to Sir Thomas White, a member of the Court of Assistants of the company, and founder of St. John's College, Oxford. It was probably his promise to connect the school with his college which induced the Company to undertake the task, and to declare by the statutes, taken in great part from Dean Colet, that their school should "have continuance by God's grace for ever." Sir Thomas White redeemed his promise by endowing the school with thirty-seven fellowships at St. John's College. The fellowships have been thrown open by an ordinance of the Privy Council founded on an act of Parliament, but the school still retains twenty-one scholarships at St. John's, of £100 each, and tenable for seven years. The school is a day-school of 250 boys, the vacancies being filled by the nominees of the Merchant Taylors' Company. The boys now pay £10 a year for their education; all the surplus cost, amounting to about £2,000 a year, being borne by the company, in whose hands the management and government of the school exclusively rest. The only trace of the monitorial system is that some of the elder boys assist in the school-work. There is no fagging, the boys never being together out of school-hours. Merchant Taylors', it will thus be seen, is a grand foundation, of the highest value as a place of education to the sons of professional men and clerks living in London; but as a pure day-school, without the monitorial system, and belonging to (or at any rate claimed as belonging to) a city company, would scarcely have been classed as a public school but for the fact that it is so included in the Public School Commission of 1861. Its inclusion tends to show how broad the authoritative interpretation of the term is with the Privy Council and the legal advisers of the Crown.

Rugby, or the free school of Lawrence Sheriff, follows next in order, having been founded in 1567 by Lawrence Sheriff, grocer, and citizen of London. His "intent" (as the document expressing his wishes is called) declares that his lands in Rugby and Browns-over, and his "third of a pasture-ground in Gray's Inn Fields, called Conduit Close," shall be applied to maintain a free grammar school for the children of Rugby and Browns-over, and the places adjoining, and four poor almsmen of the same parishes. These estates, after providing a fair schoolhouse and residences for the master and almsmen, at first produced a rental of only £24 13s. 4d. In due time, however, Conduit Close became a part of central London, and Rugby School the owner of eight acres of houses in and about the present Lamb's Conduit Street.

The income of the whole trust property amounts now to about £6,000, of which £255 is expended on the maintenance of the twelve almsmen. There is no visitor, and the foundation consists simply of a board of trustees, a schoolmaster, assistant masters, a chaplain, and the boys. The trustees have from the first been country gentlemen of Warwickshire and the neighbouring counties, who have used the school for many generations for their own children. They were until lately self-electing, and the same names, those of the Warwickshire landed gentry, appear again and again ever since the creation of the board in 1614. The trustees possess legally almost unlimited powers over the management of the school, but in practice have left very large discretion to the head master, who in internal administration, appointing assistant masters, regulating studies, and the like, has practically done what he thought best, always, however, with the knowledge that the power of review and correction rests with those to whom he is responsible for the discipline and instruction of the school. This responsibility has, however, been shared by the assistant masters for the last fifty years, since Arnold on his appointment introduced the practice of holding a "levy of masters," as it is called, monthly, for consultation on school business. The practice has been attributed to his love of equality and well-known opinions on government; but, whatever the origin, the custom has worked well, and is not likely to be disturbed. The tutorial system of Eton was introduced at Rugby toward the end of the last century by Dr. James and Dr. Ingles, Eton men who were successively head masters. As modified by Arnold it still prevails. Rugby has no special connection with either university, but provides five exhibitions annually, ranging from fifty to eighty pounds, which are open to free competition. At Rugby the school close is thirteen acres in extent, and the games played in it are regulated by an assembly called "big side levy," consisting of all boys in the upper school, another democratic arrangement not in use in any other of the nine schools. The monitorial system exists in a carefully guarded form. The sixth form, or prepostors, exercise it over the whole school, for the purpose of enforcing rules and preserving order. They have the power of fagging all boys below the fifth form. The duties of the fags are limited to dusting the sixth-form studies, making toast at breakfast and tea, running messages, and attendance at games. Attendance at football, hare and hounds, and brook-leaping is compulsory, except for those who are excused by a medical certificate; in fact, as the Commissioners report, fagging at games

has been reduced almost "to a system of making physical education compulsory in all cases in which there is no reason to apprehend evil effects upon the health from compulsion." The chapel is only used on Sundays, Good Friday, Ash Wednesday, Ascension and All-Saints', and on Founders' Day, October 19th. On other days there are short morning prayers in the big school and evening prayers in the boarding-houses. There are sixty-one foundationers, or boys living in or within ten miles of Rugby, who get a free education, except in tutorial work, for which they pay like the other boys. The head master's emoluments, including profits on boarders in the schoolhouse, amount to between £3,000 and £4,000 a year; those of the thirteen classical assistant masters range from £340 to £1,620; those of the three mathematical from £580 to £1,410, while the two modern language masters get £1,284 and £286 respectively. Of all the nine schools, it is the one which has made the greatest advance toward grafting a new curriculum of modern studies upon the old classical system, though it has stopped short in this respect of the best schools of the Victorian era.

Harrow school was founded in 1571, four years later than Rugby, by John Lyon, a yeoman of the parish. He was owner of certain small estates in and about Harrow and Barnet, and of others at Paddington and Kilburn. All these he devoted to public purposes, but unfortunately gave the former for the perpetual education of the children and youth of the parish, and the latter for the maintenance and repair of the highways from Harrow and Edgeware to London. The present yearly revenue of the school estates is barely over £1,000, while that of the highway trust is nearly £4,000. But, though the poorest in endowments, Harrow, from its nearness to London, and consequent attractions for the classes who spend a large portion of their year in the metropolis either in attendance in Parliament, or for pleasure, has become the rival of Eton as a fashionable school. The governors are a corporation under charter, and were six in number until increased to twelve, on the recommendation of the Public Schools' Commissioners. They are accustomed to interfere even less than the Rugby trustees with the administration of the head master, who himself appoints all assistant masters, gives leave to open boarding-houses, and is responsible for the financial arrangements of the school.

The custom, however, of masters' levies exists at Harrow as at Rugby, having been introduced by Dr. Vaughan, the late head master and a distinguished pupil of Arnold. Harrow, like Rugby, has no special connec-

tion with either university, but, unlike Rugby, has few exhibitions open to yearly competition. Two "John Lyon" scholarships are given yearly, of the value of £30, and tenable for four years, and there is also a scholarship of £100 a year tenable for three years, becoming vacant every fourth year. On the other hand, in prizes of medals and books for the best examinations in special subjects, the school is unusually rich. The monitorial and fagging systems are similar to those of Rugby, the chief difference being that the monitors are only ten in number; each monitor may exempt four fags from football if he is playing himself, while the head of the school may exempt any number, and that cricket fagging is more completely organized, the whole number of fags being taken in rotation, so that each boy's turn comes only once a week. After three years boys are exempt from fagging, though they may not have reached the fifth form. Private tuition on the Eton system is universal. The chapel services are confined to Sundays and a few great festivals. The choir is composed of boys who meet for practice twice a week. The masters in orders preach by turns on Sunday, a custom found to be of great value both to themselves and to the boys. The foundationers are boys resident in Harrow, and are exempt from all charges except fifteen guineas for private tuition and £2 10s. for school charges. The head master and several of the senior assistant masters have large boarding-houses, while others are allowed to keep smaller boarding-houses in which higher rates are paid, amounting on an average to an extra cost of £50 a year. These are intended for boys whose health is such as to render them unfit for the rougher discipline and more bracing atmosphere of large houses. The emoluments of the head master, after making deductions for exceptional expenses falling on him in respect of repairs of the buildings and otherwise, the result of the want of endowments, considerably exceed £4,000 a year, those of the assistant masters range between £500 and £1,500.

Last on the list of the nine schools comes the Charterhouse (the Whitefriars of Thackeray's novels). It may be fairly classed with the Elizabethan schools, though actually founded in 1609, after the accession of James I. In that year a substantial yeoman, Thomas Sutton by name, purchased from Lork Suffolk the lately dissolved Charterhouse, by Smithfield, and obtained letters patent empowering him to found a hospital and school on the old site. In the patent sixteen persons are named and incorporated as governors, which number, consisting always of persons eminent in church and state, remained unaltered until increased by

four under the advice of the Public Schools Commissioners. The governors meet twice a year to view the state of the hospital, make election of poor men and poor scholars, and do other business. The old Charter-house, though situated in one of the most crowded and unsuitable quarters of London, had this great advantage over the other metropolitan schools, that it had a playground of five acres adjoining the buildings. The whole premises, including school buildings and hospital, residences for the masters of each, cloisters and playground, were surrounded by a high wall, pierced by only one gateway. In this inclosure the boys lived, side by side, with the "poor, aged, maimed, needy, and impotent people," the poor brothers of the hospital, and worshipping in the same chapel, a pathetic juxtaposition brought out with exquisite delicacy and humour in Thackeray's sketch of the last days of Colonel Newcome. The property of the corporation, apart from the Smithfield site, produced an income of about £23,000, of which about £8,000 was spent on the school. The boys were of three classes, sixty foundationers, named by the governors in rotation, and entitled to free maintenance and education, clothes, and a gown and trencher-cap, with an exhibition of £80 a year at either university upon passing a satisfactory examination at the age of eighteen; boarders, who lived in the masters' houses, and day boys paying £18 18s. for their education. The monitorial and fagging systems were much the same as at Westminster, except that all boys in and above the fourth form were exempt. But the old school in Smithfield is a thing of the past. Since the visit of the Public Schools' Commissioners in 1862, the governors, acting in the spirit of their recommendations, have transplanted the school to one of the most beautiful parts of England, in the neighbourhood of Guildford. The great value of the site of the old school has enabled them to proceed in the most liberal manner, and the new school buildings, boarding-houses, and arrangements of all kinds are equal, if not superior, to those of any other school in the kingdom. This experiment, the first of the kind, has been eminently successful, and its results have by this time reconciled most old Carthusians to the partial break in the school traditions and the severance of their school from the hospital and the poor brethren.

The above sketch, though necessarily meagre, will, it is hoped, help to put our readers on the right road toward an understanding of the English public-school system, which undoubtedly furnishes one more example of the curious anomalies which are found in every department of the many sided

life of the country, and also of the strong practical sagacity which underlies the national character, and enables the nation, with all its strange wastefulness and indifference to logical methods, to achieve its ends and get what it needs, practically if not scientifically. We have only to look at the names of the founders to see how the need for such institutions as these schools must have been felt in all parts of the nation before and at the time of the revival of learning. The crown, great churchmen, municipalities, commercial guilds, city tradesmen, yeomen of the counties, are all there; in fact, the only class conspicuous by its absence is that of the great nobles and landed gentry—the very class which has in the long run made most use of the schools. The main object of the founders seems in all cases to have been the promotion of the best learning then obtainable; the next, the benefit of certain specified localities and of the poor. The two objects proved in the end incompatible, and one or other had to give way; time would show which it was to be. It soon appeared that there was no demand for the best learning among the poor, and so scores of Tudor grammar-schools gave up offering it at all, and fell gradually into decay and paralysis, from which they are only now awakening. On the other hand, there was and continued to be a fair demand for "the best learning" among the landed gentry and the professional and mercantile classes, and this demand the nine schools which remained comparatively faithful to their highest trust were there to meet with more or less success. And so (as the Commissioners declare in their report) "public-school education as it exists in England, and in England only, has grown up chiefly within their walls, and has been propagated from them; and, though now surrounded by younger institutions of a like character, and of great and increasing importance, they are still in common estimation its acknowledged types, as they have for several generations been its principal centres."

We are quite conscious, however, that, after having gone with us so far, the American inquirer in whose company we started will still be entitled to repeat his question in a slightly modified form, and to say: "You have only told me that certain specified institutions, differing widely in their constitutions and methods of teaching and discipline, are public schools in your sense, and that they are so because they give a public-school education. Now, then, what is this public-school education which they give?" The same question confronted the Public Schools Commissioners whom we have so often cited, and is adverted to by them in the introduc-

tion to their report. They, speaking to an English audience, were able to a certain extent to give it the go-by, and, in their report, to treat public school education as "a phrase which is popular and sufficiently intelligible," without attempting to define its precise meaning. But this, at any rate, is not so in America, and their example cannot be followed in these pages. What gives the subject such interest as it possesses for Americans is the almost entire absence, even in the Eastern States, of educational constitutions answering the purposes which the nine schools, and their modern rivals, serve in the United Kingdom. However democratic a nation may be in spirit and character, and in its political and social constitution and organization, the time must come when it will breed a gentry, leisure class, aristocracy, call it by what name you will, as certainly (as Mr. Emerson has said) as it will breed women. The more vigorous and prosperous the nation, the sooner will the class arise; and the more healthy the class, the more certain will it be to insist on the highest culture attainable for its boys and girls.

But the highest culture cannot be brought to every man's door. However good your common-school system may be, you cannot have a thoroughly satisfactory school, so far as instruction is concerned, except in great centres of population; and, in those great centres, though the school-work and teaching may be as good as you require, the conditions of life are not the best for boys (leaving girls out of the question) from twelve to eighteen, the years between the home school-room and the university. Besides, a large portion of the class in question live too far from the great centres to make use of the best common schools, without sending their boys for long periods from under their own roofs. Some system of boarding-schools, therefore, must be established; and the problem is how it can be best done, what conditions of government, discipline, and instruction, will suit the national character and habits best, and turn out the kind of men whom the commonwealth needs most.

That the English public-school system, with all its faults and shortcomings, has done this work for the old country in a fairly satisfactory manner is an unquestioned fact, and might perhaps be safely assumed here. We prefer, however, to cite the highest testimony on the point. The Public Schools' Commissioners in their report, after a very searching criticism on many parts of the system, confess the obligations which England owes to the schools, "which, were their defects far greater than they are, would entitle them to be treated with the utmost tenderness and respect;" and, after speaking

of the service they have rendered in the maintenance of classical literature as the staple of English education, "a service which far outweighs the error of having clung to these studies too exclusively," continues: "A second and greater service still is the creation of a system of government and discipline for boys, the excellence of which has been universally recognized, and which is admitted to have been most important in its influence on national character and social life. It is not easy to estimate the degree in which the English people are indebted to these schools for the qualities on which they pique themselves most—for their capacity to govern others and control themselves, their aptitude for combining freedom with order, their public spirit, their vigour and manliness of character, their strong but not slavish respect for public opinion, their love of healthy sport and exercise. These schools have been the chief nurseries of our statesmen; in them, and in schools modelled after them, men of all the various classes that make up English society, destined for every profession and career, have been brought up on the footing of social equality, and have contracted the most enduring friendships and some of the ruling habits of their lives; and they have had perhaps the largest share in moulding the character of an English gentleman. The system, like other systems, has had its blots and imperfections; there have been times when it was at once too lax and too severe—severe in its punishments, but lax in superintendence and prevention; it has permitted if not encouraged some roughness, tyranny, and license, but these defects have not seriously marred its wholesome operation; and it appears to have gradually purged itself of them in a remarkable degree. Its growth, no doubt, is due to those very qualities in our national character which it has itself contributed to form, but justice bids us add that it is due likewise to the wise munificence which founded the institutions under whose shelter it has been enabled to take root, and to the good sense, temper, and ability of the men by whom, for successive generations, they have been governed."

In the case of nations of the same race, and so nearly identical in character and habits as the people of the United States and the English, it may reasonably be assumed that a system which has borne such fruits in the one is at least worth the careful examination of the other. We purpose, therefore, in a future number to recur to the subject, and consider what is of the essence and what are the mere accidents of the English public-school system, in the assurance that, whether it may or may not approve itself to the American people, an intelligent understand-

ing and appreciation of it will greatly help them in determining how to deal best with their own boys at the age when the mind is

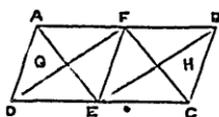
"wax to receive and marble to retain," and the characters of most men take the bent and impress which they never lose in after-life.

ARTS DEPARTMENT.

[NOTE.—We publish this month Solutions to the Algebra Problems which appeared in the April issue; also several problems contributed by Mr. D. Forsyth, B.A., of Berlin, and the Honor Problems from the University of Toronto Examination Papers. ARCH'D. MACMURCHY, M.A., Math. Ed., C. E. M.]

SOLUTIONS TO PROBLEMS IN APRIL NUMBER.

I. Let $ABCD$ be a parallelogram having the side AB double of AD . Let the angles be bisected, then the diagonals of the rectangle

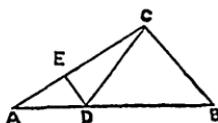


formed by the bisectors are each equal to the shorter side of the original parallelogram. Let the

angle BAD be bisected by AE meeting CD in E , then the angle FAE is equal to the angle EAD ; but FAE is equal to AED , AB being parallel to CD ; therefore, DAE is equal to DEA ; therefore DE is equal to DA ; therefore E is the middle point of CD .

In the same manner it may be shewn that that the straight line bisecting the angle B will pass through F , and the straight lines bisecting the angles C and D meet in F , which is the middle point of BA . Let AE , DF cut at G , and BE , CF at H . Join FE , then FE , AD are equal and parallel, because they join equal and parallel straight lines towards the same parts; and since $FGEH$ is a rectangle, the diagonals are equal; therefore the other diagonal GHI is also equal to AD . Wherefore if &c.

II. ACB is a right-angled triangle, ACB being the right angle; AD is one-third of AB . It is required to prove that the square on CD is equal to the square on AD , together with one-third the square on AC .



Draw DE parallel to BC , and therefore at right angles to AC . Join CD ; then the square on $CD = l$ squares on DE , EC , and

the square on $AD = l$ squares on DE , EA ; but, because AD is parallel to BC , $AD : DB :: AE : EC$; but AD is one-third of AB , therefore AE is one-third of AC ; therefore the square on $CD = l$ squares on DE and on $\frac{2}{3} AC$, that is, the square on DE and $\frac{4}{9}$ square on AC ; therefore the difference between the squares on CD , AD is $\frac{1}{9}$ the square on AC , that is, the square on $CD = l$ square on AD , together with $\frac{1}{9}$ the square on AC .

VI. In an A. P., $s = \frac{n}{2}(l+a)$, where $s =$ sum, $n = n^2$ of terms a , l , first and last terms; but $l+a = 2m$ where $m =$ middle term. $\therefore s = nm$, but $n = 2p+1$ and $m = 2p+1$. $\therefore s = (2p+1)(2p+1) = 4p^2 + 4p + 1$.

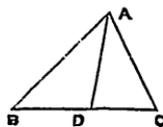
VII. $\sin 3\theta = \cos 2\theta$; but $\sin 3\theta = 3 \sin \theta - 4 \sin^3 \theta$, $\cos 2\theta = 1 - 2 \sin^2 \theta$. $\therefore 3 \sin \theta - 4 \sin^3 \theta = 1 - 2 \sin^2 \theta$, i.e., $4 \sin^3 \theta - 2 \sin^2 \theta - 3 \sin \theta + 1 = 0$. $(\sin \theta - 1)(4 \sin^2 \theta + 2 \sin \theta - 1) = 0$; $\sin \theta - 1 = 0$; $\sin \theta = 1$; $4 \sin^2 \theta + 2 \sin \theta - 1 = 0$.

$\sin \theta = \frac{-1 \pm \sqrt{5}}{4}$. $\theta = 18^\circ, 162^\circ, 90^\circ, 216^\circ, 324^\circ$.

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III. First, if $AD \nabla BD$, then $AD \nabla DC$, and the angle $B \nabla BAD$, and angle $C \nabla DAC$.

\therefore angles $B + C \nabla A$, that is, is less than $\frac{1}{2}$ the sum of the angles of a Δ , that is, $\angle \frac{1}{2}$ of 2 right angles, that is, \angle one right angle; \therefore the angle at A is acute.



Similarly, if $AD \nabla BD$, then A is obtuse.

V. If $ax^4 + bx^3 + cx^2 + dx^2 + 8$ be a perfect square, it must be of the form $(mx^2 + nx + p)^2 = m^2x^4 + 2mnx^3 + n^2x^2 + 2np^2 + 2p^2fx + p^2$.

Equating coefficients of like powers of x :

$$\begin{aligned} a &= m^2, & d &= 2np, \\ b &= 2mn, & c &= p^2, \\ c &= m^2 + 2mp, \end{aligned}$$

Then $\frac{a}{8} = \frac{m^2}{p^2}$ and $\frac{b^2}{a^2} = \frac{4m^2n^2}{4m^2p^2} = \frac{m^2}{p^2}$,

$$\text{and } \frac{b^2}{4a} + \frac{2ad}{b} = \frac{4m^2n^2}{4m^2} + \frac{4m^2np}{2mn} = n^2 + 2mp = c,$$

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(V. (a.) If

$$x + y + z = 1 + \sqrt{2(1-x)(1-y)(1-z)},$$

shew that $x^2 + y^2 + z^2 + 2xyz = 1$.

By squaring, the expression becomes

$$x^2 + y^2 + z^2 =$$

$$1 + 2 \left\{ 1 - (x+y+z) + \sqrt{2(1-x)(1-y)(1-z)} \right\} - 2xyz;$$

that is, $x^2 + y^2 + z^2 + 2xyz = 1$, since $2 \left\{ 1 - (x+y+z) + \sqrt{2(1-x)(1-y)(1-z)} \right\} = 0$.

(c.) (1) $x = y + \frac{1}{z}$, (2) $y = z + \frac{1}{x}$, shew that $z = x - \frac{2}{y}$.

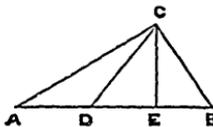
By (1) $z = \frac{1}{y-z}$; by (2) $z = \frac{xy-1}{x}$.

$$\therefore \frac{1}{x-y} = \frac{xy-1}{x} = z;$$

$$\therefore z = \frac{xy-1-1}{x-x+y} = \frac{xy-2}{y} = x - \frac{2}{y}.$$

GEO. RIDDELL, Toronto.

ANOTHER SOLUTION OF II.



II. Let AB be trisected at D and E . Join CD and CE . Then

$$AC^2 + CE^2 = 2AD^2 + 2CD^2,$$

$$\therefore CD^2 = \frac{AC^2}{2} + \frac{CE^2}{2} - AD^2. \quad (1)$$

$$CD^2 + BC^2 = 2AD^2 + 2CE^2,$$

$$\therefore CE^2 = \frac{CD^2}{2} + \frac{BC^2}{2} - AD^2 \quad (2)$$

Substituting from (2) in (1),

$$CD^2 = \frac{AC^2}{2} - AD^2 + \frac{CD^2}{4} + \frac{BC^2}{4} - \frac{AD^2}{2},$$

$$\begin{aligned} \therefore \frac{3CD^2}{4} &= \frac{AC^2}{2} - \frac{3AD^2}{2} + \frac{BC^2}{4}, \\ \therefore \frac{3CD^2}{4} - \frac{AC^2}{2} - \frac{3AD^2}{2} + \frac{BC^2}{4} &= \frac{AC^2}{4}, \\ \therefore CD^2 &= \frac{1}{3} AC^2 + AD^2. \end{aligned}$$

VII. $\sin 3A - \cos 2A$, $\therefore 90 - 2A = 3A$,
 $\therefore \cos(90 - 2A) = \cos 3A$,
 $\therefore 90 - 2A = n \cdot 360^\circ \pm 3A$.
 $\therefore A = \frac{90 - n \cdot 360^\circ}{2 \pm 3}$

Where n is an integer, negative or positive,

Put $n = 0 \therefore A = 18^\circ$,

" $n = +1 \therefore A = 27^\circ$,

" $n = -1 \therefore A = 90^\circ$,

" $n = -2 \therefore A = 162^\circ$,

" $n = -3 \therefore A = 234^\circ$,

" $n = -4 \therefore A = 306^\circ$,

Since we are to take only those values of A which are positive, and less than 360° .

F. BOULTBEE, Toronto.

IV. (b.) If $a^2 + b^2 + c^2 = 2S_2$, then $(S_2 - a^2)(S_2 - b^2) + (S_2 - c^2)(S_2 - a^2) + (S_2 - b^2)(S_2 - c^2)$

$$\begin{aligned} &= \frac{(b^2 + c^2 - a^2)(a^2 + c^2 - b^2)}{4} + \\ &\frac{(a^2 + b^2 - c^2)(b^2 + c^2 - a^2)}{4} + \\ &\frac{(a^2 + c^2 - b^2)(a^2 + b^2 - c^2)}{4}. \quad (1) \end{aligned}$$

Again, if $a + b + c = 2s$,

$$\frac{4s(s-a)(s-b)(s-c) = (a+c+b)(c+b-a)(a+c-b)(a+b-c)}{4} \quad (2)$$

First, to prove that (2) is a factor of (1).

If $(a + b + c)$ is a factor of (1), then by putting $a + b + c = 0$ in (1), that expression ought to vanish. Upon doing this the expression becomes

$$\frac{4abc^2 + 4ac^2b + 4bca^2}{4} = abc(a + b + c) = 0.$$

$\therefore a + b + c$ is a factor of (1); similarly the other three factors of (2) may be shewn to be factors of (1). Hence (2) is a factor of (1).

Next, to prove that (1) = (2).

Since (2) is a factor of (1), we may put (1) = $N \times$ (2) where N is to be found and does not depend upon the factors in (2); thus we can give any values we please to the letters involved.

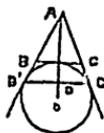
Let $a=0$, $b=1$, $c=2$,

Then $5 \cdot 3 + (-3) \cdot 5 + (-3) \cdot 3 = N(-3^3)$,

$\therefore N=1$,

and $\therefore (1) - (2)$.

VIII. Let ABC be a triangle; and let a circle, whose centre is O , touch its side BC and the sides AB , AC produced at B' and C' .



Required to find chord $B'C'$. Join AO ; then AO can be shewn to bisect $B'C'$ at right

angles. Also, AB' is equal to the semiperimeter of the triangle ABC . Let s denote this semiperimeter.

Then $B'D = AB' \sin \frac{A}{2}$, because AO bisects angle A ,

$$\therefore B'D = s \sin \frac{A}{2},$$

$$\text{wherefore } B'C' = 2s \sin \frac{A}{2}.$$

E. HAGARTY, Toronto.

PROBLEMS.

BY DAVID FORSYTH, B.A., MATHEMATICAL MASTER, BERLIN HIGH SCHOOL.

28. In AB , one side of a $\triangle ABC$, any point D is taken. BC is produced to E so that rectangle BE , $EC =$ rectangle AB , BD . Shew that $\angle ACD = \angle AED$.

29. In the fig. of Prop. 47, Bk. I., join GH , KE , FD and AE . Shew that 4 times $\triangle ADE =$ whole fig. $= \frac{1}{4}$ sum of squares on sides of $\triangle ADE$. (Bks. I. and II.)

30. One circle touches another internally at point A . Describe an isosceles \triangle about the smaller circle such that the vertex and one side shall lie on common tangent, and another angular point on circumference of larger circle.

31. I buy stock at a certain rate discount, and sell at same rate premium, brokerage being $\frac{1}{2}\%$ in each case. Find selling price of stock in order that $28\frac{1}{2}\%$ may be gained on money invested.

32. Three men, A , B , C , labour at a piece of work by turns of one day each. It is found that the time occupied will be 14 , $13\frac{1}{2}$ or 13 days, according as A , B or C does the first

day's work. How long would each take to do same amount of work?

33. A , B , C start at a given place to travel round an island 120 miles in circumference. A 's rate is $5\frac{1}{2}$ miles a day; B 's, $17\frac{1}{2}$; C 's, $29\frac{1}{2}$; in what time will they all be together again?

34. Solve $n^4 - 14n^3 + 71n^2 - 154n + 120 = 0$; having given that roots are in arithmetical progression.

35. If $c = \sqrt[2y]{1+x}$, then $x = 1 + 2y + 2y^2 + \frac{1}{2}y^3 + \frac{3}{8}y^4 + \frac{1}{16}y^5 + \dots$

36. If $1 = x(x-a) = y(y-b)$, and $4 = a^2 + b^2 + c^2 - abc$, find value of c in terms of x and y .

37. If the H. C. D. of $a^4 + 2a^2b + 2ac + d$, and $a^3 + ab + c$, be a quadratic factor but not a complete square, then the expression, $a^4 + 2a^2b + 2ac + d$, must be a complete square.

38. If $a + b + c = a^2 + b^2 + c^2 = a^3 + b^3 + c^3 = n$, then $abc = \frac{1}{3}(n^3 - 3n^2 + 2n)$.

39. Shew that
$$n + \frac{n(n-1)}{2} + \frac{n(n-1)(n-2)}{3} + \dots + \frac{n(n-1)}{2} = \frac{1}{1n} + \frac{1}{3n} + \frac{1}{5n} + \dots, \text{ ad inf.}$$

UNIVERSITY OF TORONTO EXAMINATIONS, 1879.

Honor Problems.

Examiners—Charles Carpmæ, M.A.; A. K. Blackadar, B.A.

1. The sides AB , AC of the triangle ABC are produced to D and E , DE is parallel to BC and the triangle DEB is double the triangle ACB ; prove that AB is equal to BD .

2. A common tangent to two intersecting circles subtends supplementary angles at the points of intersection.

3. If two circles cut each other at right angles, the line passing through their centres is divided harmonically by the circles.

4. Prove, $x_1 + x_2(1-x_1) + x_3(1-x_1)(1-x_2) + \dots + x_n(1-x_1)(1-x_2)(1-x_3) \dots$

$= 1 - (1-x_1)(1-x_2)(1-x_3) \dots n$ factors.

V. If the 1st of March be called the first day of the year, shew that if the p th day of the q th month be the n th day of the year,

$$n = 30q - 1 + p + r$$

where r is the greatest integer in $\frac{5q+4}{12}$.

VI. If $p, q,$ and r be three consecutive primes to 3, prove that

$$p(p-2q) - r(r-2q) = \pm 3,$$

the upper or lower sign being taken according as q exceeds p by 2 or 1.

VII. If $\frac{1}{1-2rx+x^2} = 1 + b_1x + b_2x^2 + \dots$

$b_n x^n + \dots$ prove that $b_{n+1} \cdot b_{n-1} = b_n^2 - 1$.

VIII. Shew that the sum of the series,

$$\frac{|n+1|}{|n-r-p|} \frac{|n+1|}{|r+p+1|} + r \frac{|n+1|}{|n-r-p+1|} \frac{|n+1|}{|r+p+1|} + \dots$$

$$\dots + \frac{|r|}{|s|r-s|} \frac{|n+1|}{|n-r-p+s|} \frac{|n+1|}{|r+p-s+1|} + \dots$$

$$= \frac{|n+r+1|}{|r+p+1| |n-p|}.$$

IX. Solve the equation $(x-3)(x-9)(x-11)(x-17)$.

$$= (x-8)(x-14)(x-16)(x-22).$$

X. $x + y + z = 11$

$$xy + yz + zx = 36$$

$$yz = 3x(z-y).$$

One solution is $x=2, y=3, z=6$; find all the other solutions.

11. Prove that $\sin 60^\circ = 4 \sin 20^\circ \sin 40^\circ \sin 80^\circ$.

XII. Eliminate θ between the equations.

$$m = \operatorname{cosec} \theta - \sin \theta$$

$$n = \sec \theta \cos \theta.$$

XIII. In any triangle, prove that

$$\tan^2 \frac{A}{2} + \tan^2 \frac{B}{2} + \tan^2 \frac{C}{2}$$

$$= \frac{1}{3} \left\{ \left(\frac{a}{\sin A} \right)^2 + \left(\frac{b}{\sin B} \right)^2 + \left(\frac{c}{\sin C} \right)^2 \right\}$$

$$\left\{ \left(\frac{\sin^2 \frac{A}{2}}{\frac{a}{2}} \right)^2 + \left(\frac{\sin^2 \frac{B}{2}}{\frac{b}{2}} \right)^2 + \left(\frac{\sin^2 \frac{C}{2}}{\frac{c}{2}} \right)^2 \right\}$$

XIV. The circumference of a circle whose radius is a is divided into n points, each of which subtends the same angle at a point O within the circle. If $CO = b$ and r_1, r_2, \dots, r_n , be the lines from O to the points of division, shew that

$$r_1 + r_2 + \dots + r_n = (a^2 - b^2)$$

$$\left(\frac{1}{r_1} + \frac{1}{r_2} + \dots + \frac{1}{r_n} \right).$$

XV. A circle is inscribed in a triangle, and a second triangle is formed whose sides are equal to the distance of the points of contact from the angles of the triangle; if r be the radius of the circle inscribed in the first triangle, and p, p^1 , the radii of the inscribed and circumscribed circles of the second triangle, then will $\frac{1}{2} r^2 = p p^1$.

16. The squares of the tangents from any point to a parabola are to one another as the focal distances of the points of contact.

17. S and H are foci; and C the centre of an ellipse. SM, HN are perpendiculars on the normal at P ; prove that $CM = CN = \frac{1}{2}(SP \sim HP)$.

Also, find the polar equation to the locus of N .

18. A triangle is escribed about a parabola; prove that the area of the triangle whose vertices are the points of contact is double that of the escribed triangle.

19. The equation of a circle in which $(x_1, y_1), (x_2, y_2)$ are ends of the chord of a segment containing an angle θ , is

$$(x-x_1)(x-x_2) + (y-y_1)(y-y_2) \pm \cot \theta \left\{ (x-x_1)(y-y_2) - (x-x_2)(y-y_1) \right\} = 0.$$

20. A parallelogram is described about an ellipse; if two of its angular points lie on the directrices, the other two lie on its auxiliary circle.

CONTRIBUTORS' DEPARTMENT.

"CRAM."

It seems as if, nowadays, you can get people to take sides on any question whatever, and so every question becomes a school-boy's debate. Now, one of the most hopeless symptoms that one of these little debates can take is, when one of the parties, on his own responsibility, divides the meaning of the chief word in the question, making one half to serve his own side, and leaving the other to his opponent. This is what they have done with the word "cram." I do not know who introduced the word, or what exact meaning is attached to it, but it strikes me as a somewhat vigorous slang expression, involving the idea of "too much" in it. Turkeys and chickens are crammed, and Nature is outraged in the process; if a bag or box be crammed with anything, we do not expect to get much more into it; if a learner crams, he puts more into his head in a short time than prudence can approve,—his memory is overloaded. If the learner be very young, cramming must mean the same thing. Professor Jevons has fallen into the error of dividing the meaning of "cram" into good and bad, and others have followed him. If the word is to be of any real use, let it have a definite meaning. As well might one, in discussing the question as to whether "Virtue is desirable" say, "From my point of view, No; for virtue may be of two kinds, good and bad." So we have "good cram" and "bad cram." If it be thus divided, discussion is at an end, for who would have the courage to object to that marvellous thing "Good Cram," and rightly enough, for it only means acquiring knowledge in a hurry for some definite object. Then, it is said that the good teacher "crams," and the good lawyer "crams," and the good preacher "crams." Now I do not think so, though the bad ones may. If the teacher crams, his

health will suffer, and his pupils will be little benefited; if the preacher crams, his congregation will yawn; if the lawyer crams, his clients will suffer; for, we cannot call the process of getting a rapid outline of a subject "cramming," because that is incidental to the profession, and I cannot conceive of people cramming as a profession. Even poultry are only crammed for a short period, and not habitually through their natural life. Now, reviewing a subject before an examination, after having studied it during a term, is *not* "cramming," good or bad; but requiring as much work to be done in three months as a growing, immature child—not a hard-headed lawyer—would require a year safely to master, *is* "cramming"—good and bad. A mature mind, whether it be that of teacher, or preacher, or lawyer, may perhaps do a little cramming, without much injury; a child cramming will feel the effect in his grey hairs, if he ever reach the age of them. Let us call study, "study," and cram, "cram."

A. B.

SPELLING REFORM.

Editor, Canada Educational Monthly.—

SIR,—A cursory glance over your first item under Editorial Notes in the MONTHLY for April, would lead one to imagine that you branded, indiscriminately, all who wish "to remove from the language its most glaring inconsistencies" in spelling—as "sciolists and tinkers," yet I can hardly believe that such is your deliberate opinion. Your whole article bears the stamp of desperate resistance to the reform, without advancing one argument in support of your views. It begins, continues and ends in an acrimonious tone of literary declamation against all who, prompted by philanthropic motives, wish to amend our barbarous spelling—orthography is a misnomer.

You brand such men as Dr. J. H. Gladstone, Prof. Max Müller, Prof. Whitney, Prof. A. J. Ellis, and other equally profound scholars, "sciolists!" Surely these names cannot have occurred to you at the time or you would not have used the word; especially when you, a few lines below, admit the rationality of some of their arguments, and also that "to this end we would go some length in meeting the reformers of our language," and "we should be prepared to entertain proposals to alter the form or extend the number of letters." Now when you admit that the reasons for phonetic spelling are "rational," and that you would welcome new letters, what form do your reasons for rejecting the reformation assume? You would mutilate *partially* not *wholly*; yet others who do do the same you contemptuously designate "sciolists and tinkers." Your objection is levelled at the *extent*, not the *principle*, of the reform which is desired. An inherent conservatism seems to be the motive prompting your opposition.

In the March MONTHLY you promised some arguments against the reform: let us have them, or the statement of your opinions and the opinions themselves will with difficulty be reconciled.

If you attempt the defence of your present spelling you will probably find yourself involved in a labyrinth of such gross absurdities that you will find it difficult to extricate yourself. Declamation against spelling reformers is not argument; and you should feel delicate about applying opprobrious epithets to men whose side of the question may be better than your own. I notice, however, that the opponents of phonetic spelling usually adopt that style of treating the matter; in fact they can adopt no other, as arguments and facts are so directly against them that they must either use that style or abandon the contest. I would like to hear the arguments against the reform, and am open to conviction, if wrong; but I must be convinced by sound arguments before I admit that spelling reformers are "sciolists or tinkers."

T. JNO. GODFREY.

Scotland, Ont., 7th May, 1879.

—Our correspondent unnecessarily expends a good deal of vital force in challenging our remarks of last month on the "Spelling Reform" movement, of which, manifestly, he is a valiant, if not chivalrous, defender. With all the rash enthusiasm of a presumed recent convert, he girds at us in no measured words, and impatiently clamours for our arguments. In good time, if our friend will be considerate, he will have our arguments; but in the meantime our critic had better see that he has utterly misread the "note" which has so exercised him, and misapplied our term, "sciolists and tinkers," to those to whom we had no intention of applying it. Manifestly, we are not in sympathy with the agitation for a reform; but the inconsistencies of English spelling are not ignored the while, nor are we indifferent to intelligent, if even impossible, proposals to remove them. What we are concerned about is this, that however "barbarous" our present spelling may be, it shall be saved from becoming more "barbarous" in the hands of those whose "tinkering" with it can only be a desecration. The wisdom of any change is doubtful; but the wisdom of allowing the language to be chopped beyond recognition by men who are ignorant of its history, structure, and derivation, is not wisdom, but unwisdom; and it is against such revolutionary acts that we uttered our protest of last month which has been so misconceived by our correspondent. In this democratic age we can scarcely prevent anyone who so wishes from "spelling as he speaks;" but to accommodate English orthography to the vagaries of such people is a presumptuous demand, even if it were possible to adapt it to the provincialisms and dialects that, as the language is now written, sufficiently distort the mother-tongue. The pleas in favour of a reform in spelling, we are aware, are nevertheless, many and weighty; but in England, at any rate, any practical attempt at innovation has failed to be influential. This is significant. Moreover, the principal English School Boards, outside of the London one, where Drs. Gladstone and Angus have been agitating the

reform, have largely refused to support, or even to countenance, a change. This, of course, may be British conservatism, but it is also English common-sense, and it would be odd if it were otherwise; for if the outcome of our civilization and of centuries of educational effort were to culminate in any such scheme as most of the Spelling reformers have in view, it would be a grim satire upon the past.—EDITOR C.E.M.

SCHOOL-BOOK EDITING AND AUTHORSHIP.

TORONTO, 29th April, 1879.

Editor, Canada Educational Monthly:—

SIR,—My attention has been called to a passage in the April number of the MONTHLY, which is fitted to convey an erroneous impression. You speak of the Chairman of the Central Committee as “contributing to a work which subsequently must have come before him for judicial appraisal, prior to official authorization.” I did not contribute either to this work or to any other on the authorized list. Mr. Kirkland’s statement, that he is indebted to me “for the excellent collection of examination papers in ch. xii,” must not be understood as if I had furnished these papers to Mr. Kirkland. He found them in public documents. I undoubtedly made some suggestions to Mr. Kirkland when he shewed me his manuscript; but, to represent me as having “contributed” to the work, is putting the matter in an entirely false light. I should probably have withheld even my suggestions, had it occurred to me that the work might be submitted to the Central Committee for their opinion. I, of course never had any pecuniary interest in the work.

I am, Sir,

Your obedient servant,

GEORGE PAXTON YOUNG.

—We readily give insertion to the above communication of Prof. Young disclaiming

having “contributed” to Mr. Kirkland’s *Elementary Statics*, and thus, inferentially, freeing himself from the impropriety to which we alluded in his connection with the work, prior to its authorization, in our article of last month on “School Book Editing and Authorship.” It will be seen, however, that the Professor’s disclaimer is more a metaphysical than a practical one, as, though he objects to the word “contributed,” he admits having given the author “suggestions” in the preparation of the work, which, in the relation he was afterwards to stand towards the book, was no less an impropriety than if he had given it the aid of a substantial contribution. That we were wrong in using the term “contributed” was not our fault, but Mr. Kirkland’s, as no one reading that gentleman’s acknowledgment of Prof. Young’s assistance could fail to come to the conclusion that the Professor had really made a contribution to the work. If the “excellent collection of examination papers” was made by Mr. Kirkland, and not contributed by Prof. Young,—and we now know this to have been the case—it is unfortunate that Mr. Kirkland did not put his acknowledgment of Prof. Young’s services in a less ambiguous form. But, as we have said, this Mr. Kirkland is responsible for, and not the present writer; and Prof. Young has had ample time since the publication of the book, to draw the author’s attention to the misleading acknowledgment, and to have had it either altered or withdrawn. Though we are not blamable in the matter which Prof. Young complains of, we much regret the circumstances which called for our censure. The intrigues of the Central Committee with publishing houses, however, have been too much of scandal of late for the critic to deal tenderly with breaches of propriety and acts that discredit officials, with the performance of their duties, though in Prof. Young’s case there would seem to be less to hold him responsible for than in the case of some of his *confreres*.—ED. C.E.M.

CONTEMPORARY OPINION ON EDUCATIONAL TOPICS.

CONVOCATION ADDRESSES AT
CANADIAN UNIVERSITIES.

The closing proceedings at Convocation in three of our Canadian Universities furnish excellent material this month to fill the department of "Contemporary Opinion." Whatever the activities of thought in the motherland, some of the results of which have been presented in this department in previous numbers, it is gratifying to know that we have in Canada, in connection with our highest Educational Institutions, writers and thinkers, whose words are weighty enough to entitle them to preservation in our pages, and the reproduction of which may be of important service to the youth of the Dominion. From the reports of the recent Convocation addresses at Queen's, McGill, and Victoria Universities, we extract the following, which we doubt not will be read with interest and profit, and bear testimony to the mental calibre of the men engaged in university teaching in Canada, and be an evidence of the aims and character of their work.

QUEEN'S UNIVERSITY, KINGSTON.

Principal Grant, addressing the graduates, congratulated them on the dignity of membership of Queen's University. Having referred to the fact that their education was not completed; that their university training had simply given them the spirit of students and habits of study; he proceeded as follows:—

"Each of you has probably learned already to some extent that to know himself he must know God, and that according to this knowledge of God is his theory of the universe. To be assured that you stand on firm ground here is your first necessity. All roads lead to Rome. All subjects lead to theology. Very few of you intend to study the special science of theology, but every thinking man must be

a theologian. He must have a theory with regard to the great questions that lie at the root of all thought and all interests. And his scheme of the universe must be true to all the facts of the universe so far as he knows them. This at his peril. Having got your *credo* you will find that it has got you. It will dominate your whole life. Let this be the test of whether you believe or whether you are only highly educated parrots. According to your moral earnestness you will necessarily commend to others that which is the highest truth to you. Agnostics beseech us to abandon the Christian hope for their dogged "don't know," with assured confidence that a blank is more precious than a prize. One of them has declared that Christianity must eventually be stamped out like the cattle plague; religion is pernicious and religion is infectious. Therefore the good of society demands that it be crushed out. I do not wonder at this intensity. No one will wonder at it who has read history and understands human nature. Even pessimists press their message of despair on men as if it were a veritable gospel. Give us truth is the cry of the soul. And what men believe to be truth they will urge upon others—some wisely, others unwisely. No matter what your profession, you will preach to your fellows by voice, or pen, or life. Not from the pulpit chiefly have the most far-reaching voices sounded forth to this generation bidding men walk in the paths of hope and faith, or bidding them abandon the old gospel for the gospel of dirt. Statesmen from Bunsen to Gladstone, poets from Wordsworth to Tennyson, men of science from Faraday to Tait, literary men from Carlyle to George McDonald, philosophers like Jas. Martineau and Max Muller—these and a thousand others have been preaching sermons all the more influential that they are based on life rather than on texts. In searching for sure ground on which to stand, have regard to the spirit of the ages rather than to the spirit of the age. We are the children of this age and must be in sympathy with it, not in bondage to it, for we are the heirs of all the ages. The fashion of the day is tyrannous, but you prove your strength by resisting the tyrant. Correct the one-sidedness of the past. Respect facts rather than the glittering generalizations of any writer. Respect the verdict of

history rather than the paradox of the historian. When, for example, Buckle classes Scotland and Spain together as the two most priest-ridden countries in Europe, ask why the outcome of the riding was so different in the two cases, and you will conclude that brambles and fig trees are not the same, and that it serves no useful purpose to classify them as if they were. As to what the spirit of your age is, men may differ widely in their judgment. That judgment will differ according to the induction they make. May we not venture to say that this age is above everything also critical. We hear of the modern criticism, of its achievements and claims in every department. Undoubtedly criticism has its value, but if this be the chief characteristic of our age, it cannot take the highest place and it is all the more incumbent on us not to be its captives, but its masters. Merely destructive criticism is especially worth little. Niebuhr did not abolish the myths of Greek and Roman history. He interpreted them as expressing larger historical movements than our fathers had learned from the simple stories. And in the same spirit Ewald seeks to construct early Hebrew history. But the importance of this historical criticism has been greatly overrated. I have a good deal of sympathy with the remark of Goethe about its value. "Till lately," he says, "the world believed in the heroism of Lucretia, of a Mucius Scœvola, and suffered itself by this belief to be warmed and inspired. But now comes your historical criticism, and says that those persons never lived, but are to be regarded as fables and fictions, divined by the great mind of the Romans. What are we to do with so pitiful a truth? If the Romans were great enough to invent such stories we should at least be great enough to believe them." Criticism is valuable. It has its legitimate fields and its legitimate claims. Whether we accept its results or not, we must not interfere with its work, but aim at being something more than critics. Do something. And in order that you may do, believe. All the past ages teach us the importance of this. Rejoice in the triumphs of the present as much as you will. Cherish heroic hopes with regard to the future. But be well assured, as Goethe again says, that "let mental culture go on advancing, let the natural sciences go on gaining in depth and breadth, and the human mind expand as it may, it will never go beyond the elevation and moral culture of Christianity as it glitters and shines forth in the Gospel." Take your stand on the person of Christ and the supreme fact revealed by Him of the Fatherhood of God. The more you trust it the more convincingly it will shine. Depend

upon it that fact is much grander and more life-giving, while it is not one whit more anthropomorphic than Strauss' *Universum*. Again, in your future studies you can now afford to give your strength to some special department, and in taking up this specialty, whatever it may be, never be satisfied unless you get to sources. That is a much shorter method than taking things at second or third hand, and until you have followed it, you have no right to consider yourself a scholar or entitled to speak above your breath. On account of the training given in the German gymnasia, the universities are able to set their students at independent work to a far greater extent than is possible in Britain or America. In every German university it is the aim to set as many students as possible at such work, whether it be to collate a root not yet illustrated, or to experiment in the laboratory with substances hitherto considered elementary, or to count shells never before counted, or to trace a doctrine not yet historically described. As a friend of mine studying in Germany put it, "We are told to find some bit of ground undug and to go at it with our might and tell the world what our spade has brought to the surface." It is this independent study that constitutes the superiority of German scholarship, and nothing contributes so much to it as the thoroughness of the intermediate education. Our Canadian High Schools and Collegiate Institutes are improving so rapidly that we are warranted in hoping that before long much of the work may be done in them that is now done in our universities, and the universities be free to advance beyond the work where a halt is now called. In the meantime, perfect your knowledge, as far as you can in some special department, instead of fancying that your education is finished. Again, be not too eager to attract the world's attention. Every true man is modest. I do not wonder that Bismarck groans over "the eternal talking and begging" that he has had to do. It may seem inconsistent that one whose profession is to teach and preach, and who has had to press upon others the cry of "give, give," as often as the horse leech, should sing the praises of silence and recommend it to others. It is like Carlyle extolling the excellence of silence in volume after volume, or in an eloquent address of one hour and three-quarters long to the students of Edinburgh. Nevertheless Carlyle is right. If you would not deceive yourselves—and that is the deadliest form of deceit—let brave deeds always follow close on brave words. If you cannot do the deed, keep silent. Mere talk will infallibly make you spiritually bankrupt. You may mistake flabbiness for strength. Others will not. Doubtless a word spoken in season is

good. A word is, but not the empty phrases and small verbosity with which the present generation is so sadly afflicted. Cultivate then your gift of silence if you have it, and if you have it not, seek for it earnestly."

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MCGILL COLLEGE, MONTREAL.

THE proceedings of this institution opened with an interesting historical and statistical address from the Principal, Dr. J. W. Dawson, who stated that the number of students in the McGill College, in the session just closed, was 419; and in the affiliated Colleges of Morin, Quebec and St. Francis, Richmond, 55, or 474 in all. The number of degrees in Course conferred at the two meetings of Convocation was 74, and it is to be observed in the present year that no graduates present themselves in Applied Science, in consequence of the Course in that Faculty being extended to four years. After some further remarks from the learned gentleman, the Professor of History and English Literature, Professor Moyses, addressed the graduates in the following words:—

"In the short time at my disposal to-day, I propose to make a few remarks on the latest extensions of University work in England, and to discuss the applicability of some of those extensions to the furtherance of higher education in Canada. I speak of England, because it is evident, at a glance, that Canada imitates and wishes to imitate English methods of teaching in preference to those of the United States. Quite within the memory of the present generation the Universities of Oxford and Cambridge stood isolated, as it were, from the progressive intellectual life of the nation. They were recognized everywhere as institutions whose very age entitled them to reverence; recognized, too, as embodying all that was highest in "culture and scholarship." But a vast section of the teaching power of England viewed them from afar, considering them simply as feeders of the Church and the few large public schools, or as a convenient, not to say fashionable, resort for the sons of the noble and the wealthy. In short, with broad scholastic work they had little to do. Yet, that work had been growing apace and its fruits were claiming acknowledgment at worthy hands. Men who were able to forecast the educational future of the great middle class saw that the old Universities could do a great and noble work by stepping for-

ward to meet the wants of schools whose curriculum implied more than a smattering of the subjects they taught. Bishop Temple and Oxford led the way, and Cambridge soon followed in their steps. Their overtures were welcome for they were opportune. Give us, said the schoolmasters, give us a scheme of school work, examine our boys in that work, and those who have acquitted themselves creditably, send into the world with your testimony that they have attained some degree of proficiency in the subjects you have selected. This was done, and the result was evident from the first; it may be summed up in one word, *success*. To-day the whole of England is thickly dotted with examination centres, and from the Land's End to Berwick there is scarcely a school of repute which does not present every year some of its brightest lads at the Oxford and Cambridge Locals, as they are familiarly called. So rapidly has this wise and great movement progressed that last year not less than one thousand six hundred and seventy boys and six hundred and thirty girls were examined by Oxford, and three thousand and two boys and one thousand six hundred and seventy-nine girls by Cambridge. The good which these examinations have done to the early education of young England is incalculable, the objections which might be made to them in that they lead to cramming, and to an implicit reliance on that educational bug-bear, the text-book: are far outweighed by the thoroughness of the instruction as compared with the teaching in vogue when England was entrusting the children of the poorer classes to the hands of a Squeers, whose picture, as drawn by our great novelist, is not a caricature but a likeness. Now it is this part of the field of education which I believe can be worked with great success by Canada. Here, as in England, we a University, should be constantly checking our own work and playing our important part in the reflex action which is the vital principle of the scheme. We should in every possible way be kept abreast with the times, should foster to the utmost of our power those local centres, of recent establishment it is true, but still of much promise; should welcome the men who demand an opportunity of showing the results of their teaching, remembering that they are in many cases seniors of the University doing their best to present to their *Alma Mater* for her commendation those, in many instances, likely to follow the career of their first instructors. But the parallelism between the Mother Country and the Dominion does not end here; in both the higher education of women has come, or is coming, to the front. No longer is the censure of Slade in the *Spectator* true. There he tells

the English that the general mistake they make in educating their children is that in their daughters they take care of their persons and neglect their minds; in their sons they are so intent upon adorning their minds that they wholly neglect their bodies. No longer is it time for the University of London, called into existence by the sectarian narrowness of Oxford and Cambridge—narrowness so abiding that but ten years have elapsed since Cambridge fellowships were bestowed upon Dissenters—the University of London set on foot examinations for women whose aim was to promote a thorough knowledge of such subjects as were taught in the best schools, and she awarded special certificates of higher proficiency to those who passed a subsequent and more difficult examination in specified branches of learning. Cambridge has done a similar thing. She has established throughout the land higher examinations whose specialities are some guarantee of thoroughness, has erected almost under the shades of her colleges, institutions, Girton and Merton, where her professors teach ladies the advanced parts of the subjects likely to be of use to them in after-life, and has found that when the best lady-students were submitted to the mathematical *scipos* examinations, some of them would have borne the distinguished title of *wrangler* had they been admitted to degrees in Arts. I must not omit to mention the memorable and stormy debate in the London University Convocation of April, 1878, when a large majority declared themselves in favour of throwing open the courses of the University to women. Consequent upon this University-College announced her intention of establishing mixed classes in the subjects required for the London Degree, and this step has been crowned with extraordinary success. I believe that the McGill University has just taken an interest in this branch of education, and has framed a scheme akin to the germs of those I have been mentioning. Whether development will ensue here, remains to be seen, but many of our efforts will be paralysed unless centres of instruction are established where the specified subjects are rightly taught. If we trust to candidates preparing themselves privately we may be doing well, but we might do better. There is just one cause for anxiety in regard to the educational future of Canada—the multiplication of Universities. It will be no happy day when the Canadians, like the Americans, persuade themselves that one swallow makes a summer or in other words that one eminent man makes a University. England, with all her intellectual wealth, is loath to have even one new University established in her midst. It was only the other day

that the Owens' College, Manchester, a provincial institution second to none in England, asserted that she was entitled to be raised to the rank of Oxford and Cambridge and London. Her patrons pointed with pride to her magnificent buildings, her wealth of apparatus, her highly competent staff of Professors, almost every one of whom has attained European eminence. They argued that Owens was fully able to impart the highest instruction and to grant degrees to her deserving students. But the thinking part of the nation looked with disfavour on the scheme. Leeds, Sheffield, Birmingham at once protested and said they had Colleges which would soon become what Owens then was; that to favour Manchester would be to do them an injustice. Let us, they said, let us join to found a Northern University. Yet valid objections to this are easily found. Unless Universities are absolutely needed, university rivalry is carried on at the expense of brains on the part of over-worked students. Indeed, I think I am right in saying that Owens openly avowed an intention of fixing a standard higher than that of London. Again, of many Universities some soon fall into the background, soon become enervated and produce from time to time batches of very indifferent graduates. Did I need any confirmation of the misery likely to ensue from superfluous Universities, I should find it in the outcry now being raised against the many institutions granting diplomas in medicine and surgery, diplomas very different in value. There is scarcely a medical man of note in England who has not pronounced himself in favour of amalgamation and of a uniform standard; but "vested interests" stand in the way of achievement. And thus the boon, which worthy medical students would gladly hail, is as yet denied to them. Canadian legislation, too, seems to be firmly impressed with the idea that the fruits of medical science should be fettered by such things as Provincial boundaries, and that rivers and mountain-chains should be all-availing obstacles to him who desires to profit by and to practise the ripest knowledge of the times. I am tempted to say just a word concerning sectarian Universities. In England they have had their day. It is a matter of congratulation that the English mind at last sees that sectarianism has no element of universality about it, no right to found for itself a University. The judgment of thoughtful Englishmen has declared of the sectarian Colleges, which must of necessity exist, and which are entitled to much respect, that only such subjects as can be said to belong to them in common are fit matter for Universities to enforce on all alike. A word to the

graduates of to-day, and I have done. Gentlemen, from the time when you entered on your courses of study at McGill you have looked forward to this occasion as the crowning of all your hopes. I can easily imagine the feelings with which you regard the future. The world seems at your very feet, and you ask yourselves what more you can do now that the goal of your ambition has been reached. You will, however, find that world has to overcome, and the goal but a passing illusion. When the realities of life face you in sober earnest you will learn that the relation in which you stood to McGill was not one-sided, that you were not her passive victims released on a happy day of triumph. Do not believe that the sentiment I heard expressed by one of you when he had finished his examinational work is a true one. "He had written the last pen-stroke for McGill," he said. Nay, rather, should it have been *in* McGill. You must, indeed, be wanting in gratitude if you look upon this University as a mental torture-house from which you have at length escaped. Your education is but just begun, believe me; it should end only with your lives. The University will expect you to maintain her fair fame, and, wherever you may be placed, she believes that some of you will not forget this, but will remember to repay her care by good honest work—work which she may at no distant day herself take in hand and make as honourable and honoured as that which you have just wrought. What you are destined to become is, in some measure, due to the training you have received within these walls. And the aim of that training should have been not to cram into you during four short years a large portion of the sum-total of human knowledge, not to make those men who cared little for books mere mechanical readers for the rest of their lives; its aim should have been to make you *think* and *think rightly*; to make you discern the value of that sweetness and light we have heard so much about of late years; in short, to give you a keen apprecia-

tion of the golden worth of culture. And perhaps I shall not be wrong if I affirm that you will re-echo the words of a man whose mind was eminently healthy, of a man who did his full share of life's toil, of a man whose character needs no meed of praise—I speak of Sir Walter Scott—and that you will tell the graduating class of 1880, as you leave them, how much you feel the truth of his sentiments when he speaks of his University career in words like these:—"If it should ever fall to the lot of youth to peruse these pages, let such a reader remember that it is with the deepest regret that I recollect in my manhood the opportunities of learning which I neglected in my youth; that, through every part of my literary career, I have felt pinched and hampered by my own ignorance, and that I would at this moment give half the reputation I have had the good fortune to acquire, if, by doing so, I could rest the remaining part upon a sound foundation of learning and science."

VICTORIA UNIVERSITY, COBOURG.

The annual closing exercises of Victoria College, extending over three days, May 18th to 20th, were of a varied and unusually interesting character, the proceedings throughout being highly gratifying to the friends of the Institution. We had hoped to have given some information regarding the achievements of the university during the past academical year, and to have transferred to our columns the address of the learned principal, Dr. S. S. Nelles, to the graduating class of the college, but we find our space unfortunately forbids the extension of this department, in the present number, and we must defer the publication of the latter until another issue.

CONTEMPORARY LITERATURE.

EDUCATION AS A SCIENCE. By Alex. Bain, LL.D. (Volume 25, International Science Series). London: C. Kegan Paul & Co.; Toronto: James Campbell & Son; also, New York: D. Appleton & Co.; Toronto: Hart & Rawlinson and A. Piddington. (*First Notice.*)

No book has been more eagerly anticipated by the teaching profession than this one since the announcement of it was made some few months ago. There has hitherto been no systematic effort made to bring the various functions of the schoolmaster's art under the domain of science. It is true that the scientific aspects of education have received the attention of thinkers from the time of Plato and Aristotle down, but only in a desultory way. As practised in the school-room, it has not had that specific attention given to it to justify its being called a science at all. Herbert Spencer made some attempt to treat education as a science, but his chapters on the subject are little more than fragmentary and do not claim to be exhaustive. They are so good, however, that we cannot but regret that one so gifted and so competent should rest content with being a mere contributor to the science instead of being its organizer. Mr. Bain, the well known Professor of Logic in Aberdeen University, and the author of several educational works on Grammar, undertakes in the volume before us to treat of the subject in a systematic manner, and on a scientific basis. Though it is one of a series, the International, to which many authors contribute, it bears evidence of long-continued thought and observation, and no one can deny that it is the fruit of ripe experience and judgment, and of a thoroughly trained scientific intellect.

In his first chapter on the "Scope of the Science of Education," though he is quite

liberal in quoting definitions of education from other sources, he fails to supply us with one of his own; this is certainly somewhat unpromising, and not a very scientific way of beginning his subject. In this chapter, too, we are startled with the announcement that "the leading inquiry in the art of education is how to strengthen memory" (p. 8). Now the general consensus of opinion is, that the leading inquiry in education is how to strengthen the reasoning faculties so that they may employ what memory, their handmaid, supplies; and it will take greater authority than that of Mr. Bain to restore memory to the bad eminence it once occupied. Let us see what other leading thinkers have to state on this subject. Locke says in his essay on "The Conduct of the Understanding:" "The business of education is not to make the young perfect in any one of the sciences, but so to dispose and open the minds of the young as may best make them capable of any intellectual effort when they apply themselves to it. Reading furnishes the mind only with the materials of knowledge; it is thinking makes what we read ours. The memory may be stored, but the judgment is little better, and the stock of knowledge not increased by being able to repeat what others have said, or produce the arguments we have found in them." John Stuart Mill thus expresses himself in his "Dissertations and Discussions:" "The object of education is to qualify the pupil for judging what is true or what is right, not to provide that he shall think true what we think true, and right what we think right—to make him a thinker or an enquirer, not a disciple." And Herbert Spencer says in the book we have already referred to: "Education should consist more in *training* than in *telling*. What the learner discovers for him-

self by mental exercise is better known than what is told him." Mr. Bain is like a racer which makes a very awkward start but afterwards does some excellent running. In the next chapter, for instance, devoted to the "Bearings of Psychology," he is fairly into his work, and says much that is instructive. He defines the three great functions of the intellect to be discrimination, agreement and retentiveness, and, of course, gives prominence to the latter. He lays stress upon the necessity of repetition to make perfect; enjoins morning for the severer subjects of study; and thinks that mental activity is much greater in winter than in summer. "Summer studies," he says, "are comparatively unproductive" (p. 26). We doubt whether this assertion will receive universal assent. He thus expresses himself as to the future substitutes for corporal punishment: "It is in graduated artificial inflictions, operating directly on the nerves, by means of electricity, that we may look for the physical punishments of the future that are to displace floggings and muscular torture" (p. 62). He rightly holds loss of temper on the teacher's part, however excusable, to be really a victory for wrong-doers, but indignation under control is a mighty weapon. "That quietness of manner that comes not of feebleness but of restraint, and collectedness, passing easily into energy when required, is a valuable adjunct to discipline. To be fussy and flurried is to infect the class with the same qualities; unfavourable alike to repression and to learning" (p. 110). "It [indignation] supposes the most perfect self-command, and is no more excited than seems befitting the occasion. Mankind would not be contented to see the bench of justice occupied by a calculating machine that turned up a penalty of five pounds, or a month's imprisonment, when certain facts were dropped in at the hopper. A regulated expression of angry feeling is a force in itself" (p. 77).

He very properly condemns mere lecturing to pupils unaccompanied by catechetical drill to make them reproduce what they have heard, and shows a thorough appreciation of

the ability of the instructor who can put just so many facts pointing to a conclusion before a class as will enable the pupils to succeed in reaching it by their own mental efforts. He points out very clearly that the authority delegated to the teacher exists for the benefit of the governed, and not as a prerogative pertaining to the teacher's office; that it is a means, by restricting free agency and thus abating human happiness, of preventing far greater evils than its exercise inflicts. In speaking of the motives that can be employed with children, he shrewdly remarks: "To talk to them about riches, honours, and a good consequence is in vain. A half-holiday is more to them than the prospect of becoming head of a business" (p. 104).

It was the discovery of this disagreeable truth that caused the great and good Dr. Arnold so much searchings of heart about his Rugby boys. In the next paragraph we are told the reason why a disciplinary rule cannot always be made apparent, but if rules were made only when their necessity becomes apparent, the skilful teacher would have less difficulty in enforcing them.

While on this subject Mr. Bain enumerates as important aids to discipline, good physical surroundings, airy and spacious class-rooms, organization, or methodical arrangements: "To these follow the due alternation and remission of work, avoiding fatigue and maintaining the spirits and the energies while the teaching lasts" (p. 109). But with all these he does not anticipate an early millennium for the schoolmaster. "The fear is that till the end of time the sympathy of members will continue to manifest itself against the authority of the school" (p. 111). One of the most unsatisfactory parts of this important chapter is that devoted to prize-giving. We had looked for an utterance of no uncertain sound on this vexed question, but we have read carefully the two pages devoted to an apparent discussion of it without being able to discover what Mr. Bain's opinions upon it are. He is more outspoken upon the matter of corporal punishment; his remarks upon which are worth quoting: "With all these resources ingeniously ap-

plied—emulation, praise, censure, forms of disgrace, confinement, impositions — the necessity for corporal punishment should be nearly done away with. . . . The presence of pupils that are not amenable to such means is a discord and an anomaly, and the direct remedy would consist in removing them to some place where the lower natures are grouped together. Inequality of moral tone is as much to be deprecated in a class as inequality of intellectual advancement. There should be Reformatories, or special institutions, for those that cannot be governed "like the majority" (p. 116). Our author is not a full believer in the discipline of consequences as enunciated by Herbert Spencer. He remarks forcibly enough that the results of misconduct may be too serious to be used for discipline, when the want of foresight and foreknowledge in children prevent them from realizing consequences while the evil impulse is upon them. But the sense of consequences may be greatly strengthened by constantly keeping before the minds of the young the direct relation between cause and effect in human action, so well expressed in regard to wrong-doers by the inexorable Bible truth, that if they "sow the wind they must reap the whirl-wind."

The fourth chapter is devoted to the discussion of the terms employed. Although Mr. Bain attaches so much importance to memory for knowledge imparted, he is, in this chapter, quite emphatic in fixing a limit to its improvement, asserting that it cannot be greatly strengthened but at the expense of reason, judgment, and imagination, which is not a desirable result" (p. 121).

He discusses the meanings that are attached to synthesis, analysis, and object lessons, remarking upon the last that the "cultivation of the senses" is a more suitable way to describe them. In distinguishing between information and training, he places under the head of the first, the elementary operations of arithmetic, the definitions and rules of grammar, and historical and geographical facts; while under the head of the latter he places elocution, or voice culture, geometry, or culture in deductive method,

the physical and natural history sciences, or culture in induction and classification, and thus sums up his remarks: "While the mere facts of science turned to account in practical operations are called information, the *method* of science, the systematic construction of it, the power of concatenating and deriving truths from other truths, is treated as something distinct and superior" (p. 129).

In the two following chapters, devoted to "Educational Values," we have not to read far before we find that of the two great branches of human culture—Science and Language—his opinion is decidedly in favour of the former. He regards it as the most perfect embodiment of truth, and the best means of impressing the mind with the "labour and precaution necessary to prove a thing." It is the grand corrective of the laxness of the natural man in receiving un-accredited facts and conclusions. Science, he says, "exemplifies the devices for establishing a fact, or a law, under every variety of circumstances; it saps the credit of everything that is affirmed without being properly attested (p. 147).

Hence it is as inveterate a foe to superstition as the morning light was believed to be to the nocturnal visitations of ghosts or the horrid incantations of witches.

Of Languages he asks—"If we are not to use a language at all, or very little, as is the case with the majority of those that learn. Latin and Greek at school and college, is there any reason for undergoing the labour?" He follows this question up by the assertion that the only justification for learning a language is that it may be used to receive or convey information" (p. 168).

When treating of the sequence of subjects, which he does in the next two chapters, in answer to the question, at "what age should education commence? he says: "The necessity of protracting the age to six or seven cannot be made out" (p. 185). He is of opinion it should begin at five.

The order of training should be, he insists, from the concrete to the abstract, from the simple to the complex, and, from the partic-

ular to the general (p. 198). The age between six and ten should be devoted to knowledge that needs mainly an effort of memory; this is the period for beginning languages, and learning poetry and prose. He gives precedence to rational Arithmetic as being much easier than Grammar, which he puts on a par with Algebra. In teaching Geography and some other subjects, he soundly advises to proceed from the known to the unknown; by directing attention first to the geography of the scholar's native place, so far as it is within his ken. The proper study of History is a very complex matter, involving considerations of various social phenomena known under the name of sociology. Hence, even in the study of our own country, Mr. Bain points out that an intelligent appreciation of the legislative, administrative and judicial systems, of appliances for war, of agriculture, trade and manufactures, is necessary to render past events intelligible (p. 227). He shows the absurdity of plunging children of tender age into the intricacies of European history whether ancient or modern. "If it falls flat," he says, "and has to be inculcated by the force of discipline it is better withheld" (p. 228).

MERCANTILE GRADED PENMANSHIP IN ELEVEN NUMBERS. By Samuel Clare, Writing Master in the Normal and Model Schools, Toronto. Copp, Clark & Co., Toronto.

BEATTY'S SYSTEM OF PRACTICAL PENMANSHIP IN ELEVEN NUMBERS. Adam Miller & Co., Toronto.

It is as important for our schools to have a proper system of Penmanship as it is to have good text-books in reading and arithmetic. These two series of Copy Books aim at being such, and, seeing that they are of native production, are worthy of our careful scrutiny.

The "Mercantile Series," which is in process of publication, seven books being already before the public, is in the hands of Mr. Clare, who has been for many years the Writing Master in the Normal and Model Schools of this city, and his extended experience in this capacity should render him

peculiarly fitted for the work he has undertaken. An examination of the books now before us fully bears out this opinion. The first three books are elementary in their character, and are made of small size to suit the age of younger pupils; they will commend themselves to all practical teachers for the character and style of the writing, the thoroughly methodical graduation of the copies, and the regular decrease of the amount of tracing on each page, so as to allow the scholar an opportunity from the first to practise independent writing. The size of the writing is such as to enable the youngest child to fall easily into the habit of making his letters with accuracy; and the style aims to meet that important requisite of modern penmanship—rapidity with legibility—but it is in the arrangement of the exercises that Mr. Clare shows his skill as a teacher of writing. He introduces but one or two new elements in each copy, and makes consecutive lessons of those letters that are similarly formed—gradually proceeding from the easiest to the most difficult—and in order that the scholar may become thoroughly master of what he has already learnt, constant practice is provided in the letters that have been taught in previous copies. Books 1 and 2 are devoted to the small letters; in book 3, after two copies, which are intended as exercises upon the work of the previous two books, capitals are taken up, so that when a child has written through these three books he has been made tolerably well acquainted with most of what he needs to know in the way of writing. By a system of paging in No. 2 book, which might be advantageously adopted in the other two, he has learnt to make all the figures.

The teaching of figures indeed is a distinguishing feature of this series of Copy books, since in several of the larger and more advanced books special attention is given to them; this meets with our entire approval, for we hold that children whose time at school is very limited should have an opportunity as early as possible of learning to write figures correctly as well as letters and words, since they will need to use

the one as often as the other in the business of their everyday life.

Nos. 1, 2 and 3 of the larger size are repetitions of the smaller size without the tracing, and with the addition of paging in No. 3 book. As, from Mr. Clare's excellent arrangement of the tracing, the pupil from the start is accustomed to independent writing, there is less necessity for these three books than there would otherwise have been; teachers however have the choice of the two kinds.

In No. 4 book the writing is reduced in size to that of a bold, free, and exceedingly fine commercial hand. Capitals receive more prominence now, and this book secures uniformity of size in the writing by a system of parallel lines. The size of the writing continues to diminish in books 5, 6 and 7, but the same simple and uniform style prevails throughout. In No. 5 the author begins each copy with a syllable that proves the most difficult combination in it, thus giving the scholar additional practice in what he most needs. We find such groups as *gh*, *quo*, *age* and *ash* dealt with in this manner.

While we have so much to say of the "Mercantile Series" that is favourable, there are one or two faults that need to be pointed out. In No. 2 book the *z* is abruptly introduced in the word *quiz*, before its formation has been taught. This mistake could easily have been avoided by using such a word as *quay*, which, besides teaching the use of *q* in combination, would have had the merit of giving more practice in the *y* which forms the subject of a previous lesson. After the second lesson in book 3, we fail to find *c*, a letter that needs particular attention on account of the difficulty of combining it neatly with others. So soon as the formation and combination of all the letters have been taught, every book should contain copious exercises in them, and special attention should be given to those that prove most difficult, but on no account should any letter be omitted. Mr. Clare has not been so attentive to this as to other points in his books, for we find among the small letters *j* does not appear in No. 4; *f*, *w*, *x* and *z* are omit-

ted in No. 5; *g* in 6, and *g* and *z* in 7. We trust it is enough to point out this error to have it avoided in the remaining books of the series. Notwithstanding these blemishes, the books before us bear ample evidence of ripe experience, painstaking labour, and superior skill and taste. They are alike creditable to their author and to the printers and publishers.

The plan of the "Beatty Series" is similar to that of Copp, Clark & Co.'s, both being based upon the Payson, Dunton and Scribner Copy Books, but in execution the one differs from the other as much as the work of an apprentice differs from that of a skilled mechanic.

In Beatty's first book the writing is all done by tracing, so that the child has no opportunity of testing his own ability to write the copy. There is a lack of method in introducing the letters which certainly does not speak well for Mr. Beatty's experience; *w* for example precedes *u* of which it is a modification, and *c* and *e* both come before *o*, upon which letter their formation is certainly based. Mr. Beatty's *c* is unique, he seems to have sympathized with the equivocal place it holds as a consonant, and has made it so nearly like its neighbour, vowel *e*, that in rapid writing it would be very hard to distinguish one from the other. In one of the copies of book 1, we cannot give the page, for, unlike the "Mercantile Series," none of these books are paged, we have the letters *s* and *r* in the word *sir*; two copies afterwards, a lesson is given to teach *r*, and in the next *s* is taught. Frequent repetition is as necessary in teaching writing as it is in any other subject in the school course; "a little at a time and that little well" is a maxim followed by all good teachers, but Mr. Beatty ignores it, for we have the letters *v*, *x*, *n*, *m*, *e*, *c*, *o*, *a* taught consecutively in so many copies without any attempt to perfect what has been already learnt by additional practice with the letters in combination; next we have the word *sir*, above referred to, which should really succeed the *s*, and then follows a syllable *nim* which might very profitably come next to

the *et*. No man of experience in teaching writing should ever commit such faults as these, and to say that the author of this series of Copy-books has done so, is to admit that he never taught children to write or has forgotten that he did so. After all the letters have been introduced, lessons are given in book 2, as exercises upon them, but in these why should *r*, *w* and *x* be omitted, and why should *j* be made without its dot? When pupils reach book No. 4, they begin to leave school for the duties of after life; it is therefore one of the most important of the series, and as such should be made as complete as possible in itself. Mr. Beatty gives practice in just twenty-four words in this book, and in these we fail to find *eight* of the small letters, *b*, *h*, *j*, *g*, *v*, *w*, *x* and *z*. With such a fault as this before us, we seriously doubt whether Mr. Beatty ever realized the responsibility of the work he undertook in preparing a series of Copy-books for our Canadian schools. The remaining books show the same blemish, for the letters *f*, *w*, *x* and *z* are left out in No. 5; *g* and *z* in 6; *j*, *x* and *z* in 7; *g* and *z* in 8; *k*, *j* and *g* in 9; *g* and *z* in 10,—which is the first book with angular hand;—and *j* in 11.

Of capital letters *Q*, *X* and *Z* are omitted in No. 8; *R*, *U*, *X* and *Z* in 9; and *O*, *P*, *Q*, *R*, *U*, *X* and *Z* in 11.

The size and style of the writing is tolerably uniform in books 3, 4, 5 and 6, but in 7 it is made about one-third smaller, and in No. 8 the versatility of the author's pen becomes conspicuous, for we find not less than four styles of writing; in No. 9 the same thing appears, the first page teaching one style of writing, and the second page teaching a totally different style. The letter *j* fares badly at Mr. Beatty's hands; we have already seen that he neglects to give its complete form, that he omits it altogether from four of his books, and when we examine the capitals we find he is not at all careful to distinguish its shape from that of the *I*. In Nos. 8, 9 and 11, where more than one line is needed for the copy, he takes about one-fourth more space between the lines than he allows the scholar for his writing. No. 8 is

intended to contain examples of commercial forms, but as they appear here, they are forms more honoured in the breach than in the observance, from the inextricable manner in which many of them are mixed up. Perhaps the most serious fault of these books is in the shading of the capitals. Invariably the curve of the oval of such letters as *A* is shaded in the horizontal part resting on the base line. In actual practice it is impossible to shade thus, inasmuch as this part of the stroke is made with the side of the pen which necessarily makes a fine stroke; if any shading is to be done it should appear in the down stroke when both points of the pen can be brought into play; and all good systems of penmanship which we have yet seen show it thus.

After the examination we have made of these Copy-books we can come to no other conclusion than that Mr. Beatty has not given the public the full benefit of his knowledge and skill, or that he was not equal to the task he undertook; but whether the defects we have pointed out are attributable to his fault or to his misfortune, they are such as no amount of puffing can prevent coming to light; and he had better set about removing them altogether.

AN ETYMOLOGICAL DICTIONARY OF THE ENGLISH LANGUAGE, arranged on an Historical Basis. By the Rev. Walter W. Skeat, M.A. Part I., A-Dor. Oxford: At the Clarendon Press; London and New York: Macmillan & Co. 1879.

An etymological dictionary arranged on an historical basis has long been a desideratum with students of the English language. The only work which will bear a moment's comparison with the present one—that of Mr. Hensleigh Wedgwood, of which a second edition appeared some seven years ago—though admirable of its kind, is defective in not indicating the precise source whence any particular word was actually derived. Thus, to take an instance at random, under the word “Beverage,” we are referred first of all to the Latin *bibere*; whereas, as a matter of fact, the word came to us from the French,

though the French word itself is of Latin origin. In the present work a brief account of the history of each word is given, showing the immediate source of the word, and the approximate time of its introduction into the language, or, if the word be a native one, the Middle-English form or forms of it. In some cases the words are traced back to their primitive Aryan root. This is the only proper method on which to frame an etymological dictionary. As Mr. Skeat himself says, "no error is more common than to mistake a word that is merely *cognate* with, or *allied* to, the English one for the *very original* of it." Nearly every English dictionary and every other work which treats of etymology with which we are acquainted, is more or less marred by mistakes of this nature. Mr. Skeat, we are glad to see, steers clear of all such obstructions to accurate scholarship. Wherever merely cognate forms are cited from other languages, which is frequently done for the sake of illustration, he is careful in every case to indicate that they are merely cognate and not derivative; the actual derivation being indicated by a capital initial letter immediately following the definition.

The author is Professor of Anglo-Saxon at the University of Cambridge, and is well known as one of the first of living English scholars; a fact which is an ample guarantee for the thoroughness and accuracy of his work. The vocabulary is much fuller than that of Mr. Wedgwood's dictionary, and includes all the primary words of most frequent occurrence in modern literature, and also, in many cases, their derivatives. Much space is saved by the use of an excellent and simple set of symbols. Altogether the work is one which will be found indispensable by every real student of the language. We hope to return to it and to notice it in more detail when the subsequent parts are published.

The typographical execution is superb, and will enhance the great reputation which the Clarendon Press has already acquired for the minute correctness and artistic beauty of the work which it turns out. The dictionary to be completed in four parts, of about

176 pages each, the price per part being ten shillings and sixpence sterling. Part 2 will be published about the first of November. The publication can be obtained from Messrs. Macmillan, New York, at the comparatively low price of two dollars and a half per part.

JULIUS CÆSAR, Edited by C. E. Moberley, M.A. Oxford: Clarendon Press. JULIUS CÆSAR, Edited by William J. Rolfe. New York: Harper & Brothers. Toronto: A. Piddington.

Both of these editions are highly creditable to their respective editors. The special characteristics of each are similar to those of the other plays already published under the same editorships. Mr. Rolfe has had the advantage of coming later in point of time, and of making free use of his predecessor's labours. For verbal and textual criticism, and information external to the play, the Clarendon Press edition is admirable. Mr. Rolfe attempts to give some help to a proper understanding of the motives of the drama, the characters presented, and their mutual relations. Of this "æsthetic criticism," the Oxford editor entertains a poor opinion. In Mr. Wright's preface to his edition of *King Lear*, he is particularly severe on such "sign-post criticisms" as æsthetic notes contain. He considers that they interfere with the independent effort of the reader to understand the author, and "would substitute for that effort a second-hand opinion acquired from another, which, both as regards method and result, is vastly inferior in educational value." We certainly think that the careful explanation of the text is the first duty of the teacher, and that the higher criticism should not be brought into play until philology, history, and grammar have thrown all possible light on the subject. No doubt there is the risk of teaching mere opinions, the reasons and grounds of which must, to a great extent, be beyond the comprehension of ordinary pupils; but we think the true case is not stated by Mr. Wright. Parrot-like pupils will of course receive little benefit from æsthetic instruction, but the more intelligent will be stimulated by an independent analy-

sis of the characters and situations. Even, if at the time, the full force and significance of the critical remarks of men of genius, may not be apparent to them, fuller light will come later on, and the instruction will not be fruitless. It would seem that æsthetic criticism must almost of necessity be brought to bear, in order to engage and stimulate the reader's attention; and in the case of literature which affords such a marvellous and inexhaustible field for the exercise of the highest critical faculty, surely it would be a mistake to ignore it utterly in books prepared for the use of schools and immature minds. We think it would be wise to confine such instruction within limits; but a discreet and properly cultivated teacher will find little difficulty in assigning these limits. Mr. Rolfe, as we have said, aims at providing by judicious excerpts from the best criticisms, some assistance of this kind. It is perhaps doubtful whether sentences divorced from their context, are likely to convey the critic's meaning very clearly to the student; they, perhaps, are more for the teacher's benefit, and will be of great use to him, if judiciously employed. The unwearied labours of Shakesperian critics have, indeed, not borne as precious fruit as could be wished, and the critical result of any real value is contained in a very few books. Nothing could be better than Professor Dowden's *Primer*; and his short but lucid contrast of Brutus and Cassius, in the page devoted to this drama, should be illustrated from the play itself. Indeed no criticism should be taught without being justified out of Shakespeare's own mouth. There is one very annoying defect in all of the valuable editions of English classics published by the Clarendon Press. It is astounding that their value should be so much depreciated as it is, by the want of indexes. In this respect, Mr. Rolfe's editions are worthy of all praise. While upon this subject, we would call attention to the value, to all teachers of literature, of the *London Academy*. It is not an expensive paper, and it is the very best chronicle of contemporary English literature. Besides, it contains brief accounts of the meetings of

Literary Societies, and its notices of papers read before the Shakesperian Societies, from time to time, contain much new and valuable information on points of Shakesperian criticism of all kinds. For some time to come Cæsar will be of special interest to High School Masters, and those preparing for University Honours in English, and for First-Class Certificates. No editions better for school purposes can be found than those we have been discussing. Craik's "English of Shakespeare," edited also by Rolfe, is really only a philological commentary on this play, and contains matter of the highest value to the scholar and the teacher. With these nothing is left to be desired except it may be that Cæsar may soon be included in the list of Furness's invaluable *Variorum* editions.

THOMAS CARLYLE—his life, his books, his theories, by Alfred H. Guernsey. New York: D. Appleton & Co. Toronto: A. Piddington.

We have little to say about this issue of the Handy-Volume Series. To those who don't know what books Carlyle has written, it will no doubt fulfil the promise of its title and come in handily for their information. The names of all the works are given, and two or more extracts from each. But for any assistance in discovering the meaning and drift of Carlyle's philosophy, or for any intelligent criticism on his writings, we shall look here in vain. If we were asked what scheme Mr. Guernsey had built his book upon, we should say that the problem he set himself was probably this: "Given a distaste in the Northern States for the views held by Carlyle as to negroes being made to work—required to prove a steady deterioration in the philosopher, culminating in the 'Latter day Pamphlets,' in which such views appeared." This task he has accomplished to his own satisfaction, and, let us hope, to that also of his countrymen. Possibly, however, some people may be inclined to believe that there is more truth in the views even of an old Carlyle than in those held by the youngest and jauntiest of American book-makers. Still, as we have said, to those

who are unacquainted with Carlyle's writings, the work will serve a purpose, but we trust that that purpose will not stop short of inciting the reader to gain such a knowledge of Carlyle, "his books and his theories," as he must not look for in the brief compass of this little volume, and from a compiler who cannot be said to be heartily in sympathy with his author.

WEBSTER'S UNABRIDGED DICTIONARY.

New edition, 1928 pages, 3000 engravings, 4to, sheep. Springfield, Mass. : G. & C. Merriam, 1880.

The most intense "Britisher," to use a *cis-Atlantic* term, and the greatest stickler for the supremacy of English achievement in the realm of literature, must admit that in the compilation and construction of Lexicons of the English language, English effort has been immeasurably distanced by American industry and enterprise. This acknowledgment, at the outset, must be unreservedly and ungrudgingly made. Of course, in admitting so much, it is not to be supposed that English philology is thereby discredited, or that English scholarship and letters do not really hold the high place claimed for them. Both English philology and English scholarship stand to-day, as in the past, in a pre-eminent position among peoples speaking the English tongue. Lexicography in England, moreover, has a history and a record of achievement and progress of which Englishmen need never be ashamed. To-day, the Lexicography of England, for the masses, at any rate, is the marvel of the world. In extent, accuracy, usefulness, and cheapness, English lexicons of the language cannot be surpassed. In Collins', Chambers', Nuttal's, and the other school and popular English dictionaries of the day, the English public are better and more cheaply supplied than are our neighbours across the line; while at a price surprisingly low, considering its merits and the many admirable features of the work, the English journalist and student of the language has in Stormonth's Dictionary a lexicon which may well serve the purpose of the more ambitious works of the American press.

When we have said all this, however, we fear that we have nearly exhausted our good words in behalf of English lexicographic publishing. It is true that there are greater enterprises in English lexicography than those we have mentioned. There are the works of Richardson, Todd, Ogilvie, Walker, Johnson, and Latham, and the auxiliary productions of Wedgwood, Trench, the new work of Skeat's, and the various dictionaries of the professions,—law, medicine, and theology; but these are all either specialties or works that require others to supplement them to be of adequate service to the scholar or to the professional student of the language. And just here comes in the contrast of the position of the Englishman with that of his kinsman on this side of the Atlantic. He has no "Webster;" no book of an all-satisfying requirement, no one reference work in which he will find all that he may be in quest of, no single quarry that will yield him every ore his demands require the inspection of—such as he may find in the mammoth "Unabridged Webster." As a publishing enterprise, having regard to its uses, its thoroughness, its compactness, and its price, it is an amazing product of literary skill and mechanical workmanship. The new edition lays the consultor of its pages under a greater debt of obligation than even the previous ones, for we find it enriched by a supplement containing nearly 5,000 additional words, with pronunciation, derivation, and definition, and the addition of a new biographical department comprising nearly 10,000 names of men prominent in every field of labour, both living and dead. Closely scrutinizing the supplement, we find it a most valuable addition to the work, embracing, besides old words with new meanings, new words which have come into the language as recent coinages, or that have become familiar in popular science, and are now incorporated from professional and technical lexicons. The range of pictorial definition has also been largely extended in the new issue, and now includes some 3,000 wood-cuts and drawings which illustrate the words in the body of the Dictionary, and are further made good use of, in classified

groups, at the end of the work. The educational value of this pictorial Cyclopædia is manifestly great, and as a bit of enterprise on the part of the publishers the appended matter calls for hearty commendation. To the teacher, the preliminary chapters of the work on the principles of pronunciation, orthography, etc., and Dr. Hadley's brief sketch of the English language, will be found exceedingly valuable. The other departments, appended to previous editions and here reproduced, will also be found rich in material for reference. These are the pronouncing vocabularies of Scripture names, Greek and Latin proper names, Modern Geographical names, and common Christian names. The pages devoted to Quotations, Phrases, Proverbs, and Colloquial expressions, from the Classical and Modern languages, with their English equivalents, will be found no less interesting. Of course, in critically inspecting this great thesaurus of the language, we now and again stumble over defects which are inseparable from all enterprises of the kind. These are not so much slips of the editor's pen, as instances where a prolonged incubation of thought directed upon them would lead to their removal or improvement. But where the whole is so eminently satisfactory, one must not look for the product of omniscience. One serious drawback to the work we must specially refer to, and that is the annoying incompleteness of Mr. Wheeler's compilation of "Noted Names of Fiction." In so thoroughly overhauling the work in the present edition, it is a matter of surprise that this department was not submitted to extension and revision, more particularly as the material for its useful enlargement is now so readily

to hand in the publications of Brewer's "Dictionary of Phrase and Fable," the same author's later work, "The Readers' Hand Book," and the recent "Dictionary of English Literature," by W. Davenport Adams. Of course, to incorporate in Mr. Wheeler's very incomplete vocabulary the new matter which the works above-mentioned furnish would make a serious addition to this department; but, instead of maintaining it in its present defective form, we would rather see it expunged from the Dictionary, and issued in extended shape as a separate publication. This hint the present writer, more than a year ago, gave the publishers, and suggested material for a supplementary volume to the present "Webster's Unabridged," which we hope to see Messrs. Merriam yet take up and work out. An extended collection of Synonyms and Antonyms, beyond what is given in the present Dictionary, and an exhaustive compilation of Poetical Quotations, would, with an enlarged Dictionary of Fictitious Personages, make a worthy complement to the book before us. But one must be a churl to find serious fault with any shortcomings in the present work. The volume does not profess to be a cyclopædia of all knowledge; and what it purports to be it really is; there should not be a school in the Dominion where access cannot readily and constantly be had to it. No teacher, and we might add, no reader of the language, can afford to be without it, for it is a monumental work, and the labour and money which some two score years have swallowed up in its preparation and successive improvements, is, not to speak of the eminently satisfactory results achieved, a noble tribute to our grand old mother-tongue.

SCIENCE DEPARTMENT.

[A series of notes prepared for the Monthly. by Henry Montgomery, M.A., Coll. Inst., Toronto].

THE first number of a new journal devoted to Chemistry, and published in the city of Baltimore (Innes & Co.), has lately reached us. It contains seventy-six pages of valuable matter, is neatly got up, and presents a very creditable appearance. It is entitled the "American Chemical Journal," and is edited "with the aid of chemists at home and abroad," by Ira Remsen, Professor of Chemistry in the Johns Hopkins University. In the announcement it is stated that this journal is to comprise from sixty-four to eighty pages, and is to be issued only when there is a sufficiency of suitable material, which material is to consist of original papers; articles from other journals; reviews and reports on applied agricultural, physiological, physical, analytical and mineralogical chemistry. That it will rank high in the scientific literature of America is no more than may be expected from the perusal of the specimen number, and from the fact that such distinguished names as Ira Remsen, Ph.D. (Gottingen); H. Newell Martin, D.Sc. (London), A.M. (Camb.); and J. Norman Lockyer, F.R.S., are connected with it.

DR. T. STERRY HUNT believes our atmosphere to be cosmical and not merely terrestrial; that is to say, a portion of a "universal medium diffused throughout all space," but condensed about the centres of attraction. Even the waters of our world form a part of this universal medium. Hence, a change or disturbance in the atmosphere of any one of the globes would cause itself to be felt in the atmosphere of all the remaining ones. In this manner great climatic changes are accounted for. Sir William Grove advanced the same idea

of a cosmical atmosphere in the year 1843, and Mr. Williams also advocated it in his work, "The Fuel of the Sun."

THOSE desirous of preserving minute animalcules in the natural shape will be glad to learn that such may readily be done by means of Osmic Acid. This acid (Os. O⁴), which is a poison, is dissolved in water to the amount of two per cent. A drop of this solution is put upon the infusoria under the covering-glass, but if the vapour of the acid be permitted to reach the organisms they will be instantaneously fixed and preserved. This plan has been made known by M. Cortes, of Paris. In employing the foregoing method for the preservation of the microscopic beings of an organic infusion, too great caution cannot be exercised, as the tetroxide of osmium is volatile and emits irritating and poisonous fumes.

AN American naturalist, Mr. Ernest Morris, has just returned from his fourth trip of exploration to South America, bringing with him, what is reported to be, an immense collection of the flora and fauna of Brazil, comprising seven thousand butterflies, fourteen thousand beetles, numerous moths, and a great number of curious and beautiful plants. One of his specimens is that of a plant indigenous to the regions around about the Rio Negro River, and known to the natives as "cat's-paw-cotton," which he considers capable of conversion into a most useful fabric. He describes the inhabitants of that river, lake and forest country, as poor, filthy in the extreme, exceedingly indolent, and possessed of but little religion or morality. The limited amount of labour done has to be performed by the women.

There are various shades of colour; but all are of Indian origin. The waters of the Rio Negro, one of the finest tributaries of the Amazon, are very dark, and in places quite black, owing to the presence of waste matter from the extraordinary vegetation along its banks. The dense forests are "never still at night." He speaks of having greatly relished a dinner of monkey-meat in one of the native palm huts, and declares the flesh of monkeys very palatable and by no means to be despised. Living in Brazil costs only twenty cents a day. Mr. Morris intends soon returning to explore the Japura River.

THE heart is composed of striated muscular fibres, a kind usually under the control of the will and hence termed voluntary; yet only two or three cases have been authentically recorded where the heart was really voluntary, and the individual, by volition, had the power to regulate its action. One of these persons, in showing his heart to be voluntary, stopped its movements for too great a length of time, and of course death resulted. Another instance of this rare and wonderful power is to be seen in the case of Dr. Elias Thomas, a native of Calcutta, who not only possesses control over the heart, but is also destitute of both pericardium and diaphragm, so that he can at pleasure remove the vital organ from its own proper position to other parts of the body-cavity, and back again to its natural place. Not long ago Dr. Thomas gave an exhibition in the presence of the medical professors and students in Augusta, Ga. At the beginning of the demonstration the heart was felt by Drs. Black, Campbell, and other gentlemen, and found to be beating naturally in the place where a heart ought to beat. Shortly afterwards there appeared low down in the left lumbar region a large tumour whose pulsations were synchronous with those at the wrist, while the pulsations before observable in the chest had now disappeared. He then removed the tumour to the right side of the abdomen, where the beating was again distinctly perceived. Then he raised the heart up into the chest, and altered its position so

as to make the pulsations appear at one time on the right side and at another time on the left. During the forced stoppage of the heart's action no pulse could be felt in wrists, ankles or temples.

An explanation of this singular ability to order the workings of the central circulatory organ is apparently found in the predominance of the cerebro-spinal nerve-supply over the supply from the sympathetic system which prevails in most individuals.

THE corn crops of Southern Russia have been terribly ravaged by swarms of insects belonging to two species of Coleoptera. The damages sustained are estimated at \$1,500,000. These beetles are very well known to European entomologists, always occurring in the southern portions of that continent, but seldom appearing in great numbers. They are said to be smaller than the English cockchafer, but in other respects to bear strong resemblances to it. With a view to check the multiplication and progress of these ravenous insects, the London Entomological Society appointed a committee to investigate the matter and record observations, to be sent to the British Consul at Taganrog. In their report the committee express their belief that, "It is impossible, in the present state of entomological science, to account accurately for visitations like this. It may be that the pupal condition is prolonged indefinitely, or until circumstances favour its determination; by this reasoning—which is warranted by what we know to be the case in some other insects—the pupæ might be accumulated from year to year, and the perfect insects from these accumulations burst forth simultaneously."

The *Weekly Scotsman* of 19th ult., treats at some length of the noxious vapours so abundant in the towns and cities of Great Britain, especially in those possessing large manufactories. Although Canada is comparatively a young country, and, as a consequence, our manufacturing establishments are not so numerous, nor are our cities so large and densely populated as the British,

yet even here the subject of "Noxious Vapours," is one of practical importance, affecting our comfort, convenience, and health, physically, intellectually and morally. The *Scotsman*, no doubt, rightly attributes the presence of the most prevalent deleterious gases of the atmosphere of their towns to the burning of coal containing sulphur, and to the various industrial manufactures, the former producing immense quantities of sulphurous acid, and the latter plentiful supplies of hydrochloric acid in vapour; but the bad ventilation of buildings, and the great scarcity of healthy plants in cities are also mentioned as auxiliaries in the production and maintenance of foul gases. The carbon dioxide gas added to the air by human respiration, combustion of fuel, of coal oil, gas, etc., ought naturally to be used by the vegetable kingdom, and a supply of oxygen be given in return; but where plants are few and the population crowded, as is the case in too many streets of all towns, there is no sufficient counteracting influence, and the carbon dioxide is permitted to accumulate to an extent totally incompatible with a proper state of health. Carbonic acid gas when inspired by a human being is not *poisonous* but simply *suffocating*, and if one-tenth per cent. of it be present in air, that air should not be respired, while ten per cent. of it completely extinguishes the vital flame. Then, there are always emitted from the lungs and skin, as companions of this gas, certain putrescent organic substances which manifest their presence by an offensive odour when expired air is kept confined in a vessel for a short time.

Whilst fully recognizing the dangers to be constantly and carefully guarded against in the excessive accumulation of sulphurous acid, carbonic acid, and other vapours, through the processes of combustion, respiration and manufacturing, as well as from defective ventilation and lack of plant life, we would do well to recollect that there are, peculiar to towns and cities, several other fruitful causes of disease besides those referred to above, such, for instance, as want of cleanliness on the part of both private individuals and public officials, bad drainage,

and impure water supplies. With respect to cleanliness it may be said that there is as great a want in the country as in the city. This may be true; but it must never be forgotten that very different results are produced by uncleanly habits in the open country and in the crowded city: what may be harmless neglect in rural regions becomes positively destructive where thousands are clustered together. It would be interesting to know what proportion of the noxious gases that contaminate the atmosphere of our towns has its origin in the decomposition of the innumerable kinds and conditions of vegetable and animal matters so frequently to be found in yards and lanes. The evils arising from imperfect drainage, the unwise habit of connecting sewers with the inmost chambers of modern dwellings, and the fever-poisons carried in many waters, need not be dwelt upon. The remedies to be employed, in order to keep in a tolerably pure condition the air we breathe and the water we drink, may be summarised as follows:—The planting of trees on every street; the cultivation of gardens, and encouragement of lawns; ventilation by which not only the injurious gases may be quickly got rid of, but also a continuous and sufficient supply of good air be obtained; the careful and speedy removal of all organic offal to a great distance from human habitations, or to be buried like other remains of animals; instead of being deposited on neighbouring vacant lots, or used in filling up holes within the city limits; also proper drainage; and the thorough filtration of all water used for drinking purposes. The purification of the public water-supply is far too often grossly neglected by civic authorities; therefore, they who are desirous of procuring it free from objectionable substances must make frequent use of the charcoal and sand filter. For clearing the air of the vapours of sulphurous acid, added to it by burning coal, no satisfactory method appears to have yet been made known. With respect to the vapours of hydrogen chloride generated, for instance, in the manufacture of sodium carbonate, a very great deal has been accomplished; in place of allowing them to escape

they are condensed, and afterwards utilized in the preparation of bleaching-powder.

Two papers have recently been read before the Geological Society of London, England, by George Jennings Hinde, Esq., F.G.S., who has been a resident of Toronto for some years past. One of these was "On Conodonts from the Chazy and Cincinnati groups of the Cambro-Silurian, and from the Hamilton and Genesee-Shale divisions of the Devonian, in Canada and the United States." The Conodonts, which are "minute, glistening, slender, conical bodies, hollow at the base, pointed at the end, more or less bent, with sharp opposite margins," were first described by Pander, as occurring in the Silurian rocks of Russia, and have been variously placed by writers amongst the Molluscs, Annelides and Fishes. Mr. Hinde gives his opinion that their "true Zoologi-

cal relationship is very uncertain," yet he thinks they most resemble the teeth of hagfishes.

The second paper was "On Annelid Jaws from the Cambro-Silurian, Silurian, and Devonian Formations in Canada, and from the Lower Carboniferous in Scotland." He mentioned fifty-five different forms of wandering Annelid worms represented by his large collection. These remains are of interest as being among the earliest forms of life that have been found, excepting, perhaps, *Lozoon Canadense*.

It is pleasing to learn that Mr. Hinde's very practical and original labours have been highly appreciated by the London Geological Society, Dr. Woodward and others expressing admiration of the labour and research shown in these papers, as well as satisfaction that the author's conclusions respecting the Annelid Jaws were correct.

TEACHERS' ASSOCIATIONS.

CHRONICLE OF THE MONTH.

THE LENNOX AND ADDINGTON TEACHERS' ASSOCIATION held a convention on the 25th April, at Napanee, at which nearly a hundred teachers were present, Mr. Fred'k Burrowes, Inspector of Public Schools, occupying the chair. The exercises commenced with a lesson on Drawing, by Mr. A. B. Kidd, Head Master of Newburgh Public School, in which some valuable practical instruction in this very interesting branch of popular education was given, and elicited much commendation.

The Association then proceeded to elect the officers for the current year with the following result:—

President—F. Burrowes, P. S. I.
1st Vice-President—R. Matheson, B. A.
2nd " " —A. B. Kidd.
Secretary—Wm. Tilley.
Treasurer—James Bowerman.

Committee of Management — Wm. J. Black, Napanee; D. G. Storms, Ernest-

town; W. R. Clancey, Ernesttown; Mrs. R. McKim, Selby; Miss J. Walsh, Napanee.

Mr. Thos. Henry then took up the subject of Algebraic Factoring, confining himself to the factoring of trinomial, and binomial quantities. His modes of operation, and of demonstrations were characterized by much simplicity.

He was followed by Dr. McLellan, who, after complimenting Mr. Henry upon the accuracy of his methods, took up the subject more extensively, and gave several artifices for the factoring of quantities that hitherto it has been deemed impossible to factor.

The next subject was the English Literature for Third Class Teachers, which was ably handled by Mr. Matheson. The systematic mode of studying the subject which he recommended must be of the greatest use to candidates in preparing for an examination.

Dr. McLellan then gave an admirable lesson on the teaching of arithmetic to junior

classes showing how arithmetic should always be taught to little ones by means of tangible objects, and that it could be so taught as to master the four fundamental rules before ever a text-book was put into their hands. He went on from that to the teaching of more complicated arithmetical operations, and showed how they may be simplified by adopting the analytic method.

The first subject taken up on the second day was Geography, introduced by James Bowerman, Head-Master of Napanee Model School, who treated the subject in a masterly manner. He showed how young pupils should be made familiar with the cardinal points, and the relative position of places by means of local objects, and recommended the use of geographical pictures to illustrate the different divisions of land and water. He recommended map-drawing as one of the best means of teaching descriptive geography thoroughly.

Dr. McLellan then took up the subject of reading. After referring to the indifference with which reading has too often been regarded, he spoke of the more common errors and defects, such as general slovenliness of articulation, reading too rapidly, reading in a monotonous tone, &c., and gave practical suggestions for the remedying of these. He showed that reading was much more than an accomplishment, that it was a powerful educating exercise in cultivating the habit of continuity of thought. He enlarged upon the necessity of careful preparation on the part of the teacher, not only by close study, but also by the reading aloud of each lesson before attempting to teach it.

Mr. Embury, of Newburgh High School, then gave a very useful lesson on the teaching of Euclid. His method of presenting the subject to young pupils, was somewhat analogous to that recommended by Dr. McLellan in the teaching of elementary Arithmetic, and by Mr. Bowerman in the teaching of Geography, namely to avoid abstractions as much as possible, and to teach definitions and axioms by means of the blackboard without referring to a text book.

The concluding subject of the session was

an address by the President on, "How to secure regular attendance." As some of the aids in securing this very desirable attainment Mr. Burrowes recommended the following:—

1. That the teacher should make the school room and its surroundings as attractive as possible.

2. That he cultivate a kind and courteous manner towards his pupils.

3. That he pay particular attention to those pupils who are the least precocious.

4. That he prepare the studies for each day so as to be able to impart to them a living interest.

And 5. That when occasion requires it, he visit the parents of absent pupils to make inquiries, and thus manifest his interest in them.

WENTWORTH TEACHERS' ASSOCIATION.
—The semi-annual meeting of the above Association met in the Collegiate Institute, Hamilton, on the 2nd of May.

The meeting was opened by prayer by Mr. Shanks. The attendance was large.

Moved by Mr. B. Bull, seconded by Mr. Norton, that Messrs. Smith, Dickson, McQueen, Fletcher, Norton and Stuart be a committee to revise the regulations of the Teachers' Library. Carried.

Moved by Mr. Fletcher, seconded by Mr. Davidson, that Messrs. McQueen and Norton be our representatives to the Provincial Teachers' Association. Carried.

Moved by Mr. Fletcher, seconded by Mr. Norton, that Messrs. Cruikshanks, Davidson and J. F. Ballard be a committee to consider the matter of corporal punishment. Carried.

A lengthy discussion ensued on the use of corporal punishment in schools, Messrs. Norton, Fletcher, Moore and Shaver taking part.

Moved by Mr. R. McQueen, and seconded by Mr. R. E. Moore, that Messrs. Norton, Robertson and Fletcher be a committee to nominate officers of the Association for the ensuing year. Carried.

Mr. R. E. Gallagher, of the Hamilton Commercial College, gave a lecture on penmanship, which was very favourably received.

The committee on the nomination of officers brought in the following report:—

President—George Dickson, M.A.

Vice-President—J. H. Smith, P. S. I.

Treasurer—W. C. Martin.

Secretary—W. E. Norton.

Executive Committee—A. Macallum, M.A.,
A. W. Falconer, William Stewart.

The report was adopted.

Mr. W. H. Ballard, M.A., then took up the subject of Mental Arithmetic, and occupied the remainder of the afternoon in dealing with short and concise methods of solving difficult problems in arithmetic, which proved very interesting.

The evening Session consisted of a musical and elocutionary entertainment, in the latter of which Mr. Lewis, of Toronto, took prominent part.

SATURDAY MORNING SESSION.

Mr. Richard Lewis, Head Teacher of the Dufferin School, Toronto, introduced the subject of "How to Teach Reading." He first treated of the objects to be aimed at in teaching reading, and held the opinion that if this subject were properly taught, public readings would in the course of time take the place of the theatre in public entertainments. He then spoke at some length upon the present system of teaching reading in our Public Schools, and condemned it in almost unqualified terms as being clumsy and illogical. He next took up the phonic system of teaching and distinguished it from the phonetic method, of which he does not approve. He explained the phonic method as used in many of the leading schools in the States, and recommended it as the best for cultivating the voice and making good readers. He treated the subject in a very able manner, and showed the great importance of distinct utterance of the vowels and the final consonants, and dwelt at some length upon inflection, pitch and tone. Some fine illustrations of the different tones to be used in elocutionary reading were rendered in good style. A very interesting and instructive part of his address was his rendering of "Mark Antony's Oration" interspersed with

explanations of the different tones and inflections used in the selection.

Mr. Smith, I. P. S., moved, seconded by Mr. Sheppard, that a vote of thanks be tendered to Mr. Lewis for his very able and instructive address. Carried.

Mr. Smith brought forward the claims of the CANADA EDUCATIONAL MONTHLY, and urged upon all to assist in increasing its circulation.

Moved by Mr. Shank, seconded by Mr. R. McQueen, that the Committee appointed yesterday to revise the regulations regarding the Library, be authorized to make such regulations as they may see fit for the distribution of the books. Carried.

The Association then adjourned.

THE COUNTY OF ONTARIO TEACHERS' ASSOCIATION held its half-yearly meeting at Port Perry, on Friday and Saturday, May 16th and 17th.

The President, Mr. Jas. McBrien, P. S. Inspector, occupied the chair. Mr. H. S. Clerke was introduced and read an excellent essay on "How to teach Reading and Spelling to beginners."

Mr. D. Jennings followed with an instructive paper on the "Teaching of Geography." Short addresses on English Literature were given by Messrs. Pedley, Robinson, Magee and Tamblin.

On Saturday "Solutions to Arithmetical Problems for Second and Third Class Certificates" were given by Mr. J. J. Magee, B.A. Mr. Jas. Hughes, P. S. Inspector, Toronto, gave a lengthy address on "Mistakes in Teaching." "Factoring" was fully exemplified by Mr. Jas. McKenzie. The "Question Drawer," conducted by Mr. W. W. Tamblin, M.A., closed the proceedings. On Friday evening Mr. Hughes lectured on the Kindergarten. Both of his addresses were well received.

The next meeting is to be held in Uxbridge, about the middle of October, when another successful convention is expected.

JAS. BROWN,
Sec.-Treasurer.

EDITORIAL NOTES.

TOPICS OF THE TIME.

WITH the present number we complete half a year's labour in our endeavour to establish a Monthly Magazine in Canada in the important interests of Education, of a character befitting the cause it represents, and the profession engaged in it. It is not for us to say how successfully we have done our work, nor how far we have fulfilled the promise of our original prospectus. We are but too conscious of having come short of the ideal with which we set out; though it will be understood that the realization of our aims was contingent as much upon the efforts of others as upon our own. Still, we have not been left in the dark as to the acceptability

of our work, for the response it has met with has been hearty and flattering. If the range of acknowledgment has been somewhat narrow and the area of our circulation not all that could be desired, it has been due to causes other than those which the Magazine could itself influence. For we have not only had to contend against indifference in regard to our venture, but, to some extent, there has been a withholding of support from ungracious motives. The teacher's occupation is not always manifested in its liberalizing light. In the profession, as out of it, are to be found men sluggish alike in their intellect and their sympathies. The earnest, enthusiastic natures are ever the few, as are those in the profession on whom rests the spirit of their vocation. Yet have we striven to arouse a kindling interest in educational work, and there has been much to encourage one in the result. With each successive issue we have made a gain, and we hope, as we go on, to find continuous and increasing evidence of it. With a closer contact we shall have a quickened activity, and with a wider acquaintance will come an extended support. Meantime,

perhaps our friends will do a little more to contribute to this. There are many sections of the Province in which THE MONTHLY is yet a stranger. In all of them the publication should be welcomed, for only a wide-spread circulation can sustain it. County Teachers' Associations offer the readiest means of enlarging the sphere of our activity, therefore vigorous and concerted measures to disseminate THE MONTHLY should not be omitted from any programme at the Conventions. Substantial aid on such occasions might also be rendered in securing literary contributions, and otherwise in quickening the sense of the need of a fittingly representative professional journal, and in ensuring it adequate support. Nor should the social value of an organ like THE MONTHLY be lost sight of at these meetings, for the greater the professional recognition it receives the more it will be able to interest public sympathy in the teacher and his work. At its almost nominal subscription rate, moreover, little should interfere with its most signal success. May this be now speedily secured.

During the summer months, when matter becomes rather scanty, and support somewhat flags, the Magazine will appear bi-monthly, though the issues will be increased in bulk to make up in part for the absent numbers. With the September number the monthly issue will be resumed, and we hope in the interval to receive large accessions to the subscription list, and many contributions for its pages.

In reply to a letter from Mr. Seath, Chairman of the Executive Committee of the High School Masters' Section of the Teachers' Association for Ontario, requesting him to postpone the fixing of a date for the Annual Intermediate and for the one next

after July 1879, until the High School Masters have had an opportunity of expressing in convention their views upon the subject which is of vital importance to all of them, and in reference to which there exists among them a diversity of opinion, the Minister of Education has stated that it is not his intention at present to do more than arrange for the examinations in July 1879, and that he will be glad, before fixing a time for future examinations, to give the High School Masters an opportunity of discussing the subject in all its bearings. He however intimates that, in the best consideration he has yet given to the subject, the academic year should terminate at midsummer, and that the Annual Examinations should take place early in July. This, however, as he says, is merely his own opinion, and he will no doubt be prepared to make such arrangements as will suit the interests of the majority. For our own part, we are afraid that strong objections can be raised to holding the Intermediate in either July or December; and it seems unfortunate that the Department should persist in maintaining a system that is on all hands admittedly productive of injury to the cause of education. That the present modification will be found to work badly, so far as "payment by results" is concerned, no one who has watched the current of opinion can doubt; and this change must be regarded as the beginning of the end. Years ago, when Prof. Young wrote those reports on High School Education which showed up the defects of the system in no sparing language, the great panacea advocated was increased inspectorial power. But this has been found to be illusory, and the very elaborate scheme devised to distribute \$10,000 a year has not met with the reception due to the ingenuity of its promoters.

Uncomplimentary murmurs, often "not loud but deep," have been provoked, and it will soon be a question for discussion whether it is in the public interest to spend about \$9,000 a year, or to distribute \$10,000. Money spent on education is well-spent money; but money spent on the mere details and red-tapism of our system is badly invested.

We are glad to notice that the Minister of Education has by his action in the matter of the date of the Intermediate, recognized the propriety of obtaining the opinions of the teachers direct from themselves. By systematically adopting this course he can greatly increase his own personal popularity with the profession, and at the same time add materially to the efficiency of the Department over which he presides. There are few professions which have so many drawbacks as the teacher's, and it is as much the duty as the privilege of the Minister to increase its importance in the public estimation.

BRIEFS ON NEW BOOKS.

Macmillan's Copy Books, 14 numbers, 3s. each. London: Macmillan & Co. By the courtesy of the publisher we have had a set of their English Copy Books forwarded to us, with the appropriate motto upon each, "No line which, dying, he could wish to blot." Excellent as are all the publications of this house, we cannot in the present instance, however, commend its enterprise. Indeed it must be allowed that in the matter of Copy Books, as in Atlas-Geographies, the product of this side the Atlantic is superior to that of the other. There are two radical faults in the Copy Books before us, which, in our view, condemn them at the outset, viz., these: that the paper is a species of printing rather than of writing paper, and the copy-lines and the ruling seem to be printed from metal types rather than from lithographic transfers. The effect of this, and the heavy printed ruling, is to deface the bottom formations of the copylines, and to give a smeared aspect to the page. The formation of some of the capital letters of the series, moreover, can scarcely be considered artistic. The books, however, have some features of excellence; the rules for the pupil, for instance, printed in the case of the early numbers, at the top of each page, being admirable; but we fear that American and native enterprise, in Copy Book manufacture, leave but a faint chance of the series meeting with favour on this side the Atlantic, whatever may be their reception on the other.

The Temperance Lesson Book, by B. W. Richardson, M.D., LL.D., F.R.S. London: W. Tweedie & Co., 1879. This is a capital little collection of lessons, designed for reading in schools and families, on "Alcohol and its action on the System," prepared by one of the foremost physiologists of the day, at the instance of a committee of the National Temperance League of England. The assumption made by the author is, that people are intemperate from ignorance, and indulge in stimulants not knowing the properties of alcoholic drinks, nor their physiological action on the system. In a series of clear and most instructive lessons, over fifty in number, the chemical action of alcohol is explained, and its injurious and frequently fatal effect on the system demonstrated, each lesson winding up with a number of questions on the subject of the chapter which impresses the information imparted in an effective way. As a manual for Temperance Clubs, and a popular science text-book for home reading, this little work is deserving of wide-spread circulation.

Manual of Method. By A. Park. London: Blackie & Son. Toronto: James Campbell & Son. The examination of this little book has given us much satisfaction. It is written by one who has had a great deal to do with the training of teachers in the subjects that form the daily routine of school-room work, and who is a good exemplification of Solomon's remark, "The wise man's eyes are in his head." Written for the use of Pupil Teachers and Assistant Masters in Britain, it is the best book we have yet met with to put into the hands of students-in-training in this country. The "Hints" are its most valuable feature; these are always practical, and, what is far more important to the young teacher, *practicable*. They are in most cases accompanied by explanatory remarks, in which the author gives the reader the benefit of his own extended experience. He is not always careful, however, to see that a new subject is put in the easiest way before children. It is now an accepted truth in education, that we should with children proceed from the concrete to

the abstract; from the particular to the general. In explaining such terms as *singular* and *plural*, therefore, we should lead up to the definitions by copious examples of individual words, and if possible let the children themselves make their own definitions, which could easily be rounded into shape by the teacher. Mr. Park's plan, however, is first to explain the terms, and then let the children exemplify them with words of their own. His admirable models of object-lessons would have served their purpose better had they been upon subjects more within children's ken than The Mole, and Nail Making. These are but trifling faults in a book of such sterling merit. It well deserves to be called a Manual, for in addition to its convenient size, it is interleaved with stout closely-ruled paper for notes. We have no hesitation in commending it as a useful aid to those who are preparing to enter upon the arduous profession of teaching.

Messrs. Willing and Williamson, Toronto, have just issued, in neat pocket form, a new revised edition of the First Book of Ovid's "Fasti," with English notes, by F. A. Paley, M.A., and others. The work appears in a series, entitled "Canadian Collegiate Classics," and possesses that useful appendage to a student's text-book, a good vocabulary.

That the study of English is being pursued with increasing avidity, even in Canada, is evidenced in the native publication of a little manual, entitled, "The Elements of English Etymology for the use of Public and High Schools," by J. W. Connor, B.A., Head Master of the Berlin High School (Toronto: Wm. Warwick). Unfortunately the work only reaches us as we go to press, and we are therefore obliged to postpone notice of it until our next number. This much we can at present say, however, that Mr. Connor's reputation as a critical student of the language, should secure interested attention for any work he may prepare for the use of schools or the profession.

From Messrs Harper Bros., New York, we are in receipt of a new revised edition of a favourite work, "English Synonyms explained in alphabetical order, with copious illustrations and examples, drawn from the best writers," by George Crabbe, M.A. The new edition is enriched with an ample index, and is otherwise largely improved. From the author, issued by the same house, we have an admirable treatise on gymnastics and muscular training, entitled "How to get strong and how to stay so," by William Blaikie, New York. Having closed our review department for the month, we can only acknowledge the receipt of the work here, and meantime warmly recommend it to our readers as an eminently practical manual on physical exercise and drill, which ought to be in the hands of all trainers of youth.

WE are in receipt, from the Government Printer, of the annual report of the Ontario Institution for the Education of the Blind, at Brantford. Its contents are mainly made up of the elaborate report of the Principal, Mr. J. Howard Hunter, M.A., whose hearty and intelligent labours in behalf of the Institution and its afflicted inmates are worthy of all praise. The portion of the report dealing with the appliances for the literary, musical, and industrial instruction of the pupils is exceedingly interesting, and calls for one's active sympathies in Principal Hunter's humane work.

From the author, the Rev. Principal McVicar, of the Presbyterian College, Montreal, we are in receipt of an Elementary School Manual, entitled, "A Primary Arithmetic" (Montreal: Dawson Brothers), which possesses many of the simple attractive features of the American text-books on arithmetic for young pupils, somewhat upon the plan of the Kindergarten object-lesson books. The author, we understand, is preparing for early publication a more advanced text-book on the same subject.

EDUCATIONAL JOTTINGS.

THE Annual Convention of the Ontario Teachers' Association is announced to meet

in the Normal School Buildings, Toronto, on the 12th of August, and the programme of proceedings augurs well for an interesting meeting. From the latter we learn that, after the President's address, the following papers will be read, viz.: by Mr. McHenry, of Cobourg, "The Higher Education of Women;" by Dr. M. J. Kelly, of Brantford, "Uniform Examinations for Promotion in Public Schools;" by Prof. Young, "The order of development of the faculties in relation to Education;" by Mr. Inspector Brown, of Peterboro', "Physical Education in School;" by Mr. Inspector Hughes, "Is Compulsory Uniformity in Text Books desirable?" to conclude with a lecture by Principal McVicar, of Montreal. In the Public School Section, the following papers will be discussed: "The Utility of Teachers' Associations," "Model School Work," "Recent School Legislation," "Phonic Reading," and "Educational Journals." The Board of Directors of the Association express the hope that local associations will be well represented by delegates at the Convention.

THE Annual Meeting of the Education Society of Eastern Ontario is announced to be held in the Normal School, Ottawa, on the 30th July next, when its proceedings will be opened with the President's Inaugural Address. The following papers are announced to be brought before the meeting, viz.: "Entrance Examinations and High Schools," by Mr. Inspector Glashan; "The Position of the Model School in our Educational System," by Messrs. A. C. Osborne and W. E. Sprague; "Intermediate Examinations and High Schools," by Mr. P. C. McGregor, B.A., Almonte; "Theory of Education as effected by modern advances in knowledge," by Rev. Mr. May; "Music in Schools," by Mr. W. S. Workman; "Influence of Teachers in Training on Model School Pupils," by Mr. W. J. Summerby; "Science in High Schools," by Mr. A. P. Coleman, B.A., Cobourg; "Influence of Model Schools," by Mr. Inspector Steele, etc. The evening lectures will be delivered as

follows: Thursday the 31st, "The Arthurian Legends," by Mr. W. R. Riddell, B.A., LL.B., Ottawa; and on Friday, August 1st, "Psychology in its relation to Education," by the Rev. Prof. Young, M.A., Toronto,

We are glad to notice that in the Estimates passed at the late session of the Dominion Parliament a considerable sum was placed for the encouragement of Military Drill in our Colleges and Collegiate Institutes. We presume the latter term is intended to include the different grades of High Schools. This is a most desirable change, and the Minister of Militia and Defence has earned the thanks of every lover of the volunteer system. There is no good reason why we in Canada should not ultimately adopt a system similar to that in operation in Prussia, and the present experiment cannot fail to prove a successful step in this direction. There are many persons in favour of the proper and

systematic instruction of our young men in Military Drill. In addition to the physical culture they ensure, these exercises will be the means of instilling into the rising generation that feeling of patriotism which the necessary economy of late years has in many places almost destroyed among our young men.

It will be noted in our advertising pages that Mr. Richard Lewis, of Toronto, will form an elocution class for teachers, in the first week of the midsummer holidays, for the purpose of imparting instruction in the cultivation of the voice, with the view to expressive delivery in reading and recitation, etc. This is an opportunity which teachers desirous of gaining some practical knowledge of the art of reading should not overlook, either for their own benefit or for that of the schools. The fee for the course is placed at a very moderate amount.

OFFICIAL NOTICES OF THE DEPARTMENT OF EDUCATION.

EDUCATION DEPARTMENT, ONTARIO.
TORONTO, *April 23rd, 1879.*

ALEX. MARLING, ESQ.,
Secretary, Education Department :
SIR,—

Having been called upon by the Minister of Education to withdraw an advertisement published in *The Canada School Journal*, entitled "Warwick's Authorized Series of School Text Books," as being likely to cause misapprehension as to which are authorized, I have withdrawn such advertisement, and in future my advertisements will specify more clearly what are authorized text books.

Yours respectfully,
(Signed) WM. WARWICK.

EDUCATION DEPARTMENT, ONTARIO.
TORONTO, *April, 1879.*

SIR,—
Having been called upon by the Minister of Education to withdraw an advertisement, in the form of a circular, entitled "Adam Miller & Co.'s List of Text Books, authorized by the Minister of Education, for use in the High and Public Schools in the Province

of Ontario, or recommended for the use of Teachers," with a note at the bottom of the first page of said circular, to the effect that "none of the above works have been authorized for the Province of Ontario, but most of them have been prepared to meet the requirements of students, and are in use in nearly all of our principal Public and High Schools," and also to withdraw a further note upon an English Grammar, by C. P. Mason, to the effect that this edition, termed "Public School Edition," had "been issued at the request of a large number of Public and High School Teachers in Canada who wished to place in the hands of their pupils a Text Book, etc.;" we do hereby withdraw such advertisement, and also undertake to remove such note and title of "Public School Edition," and promise in future advertisements, or in reference to any school book, to distinguish clearly between books authorized for use in the Public and High Schools in the Province of Ontario, and those not so authorized.

We have, &c.,
(Signed) ADAM MILLER & CO.
ALEX. MARLING, ESQ.,
Secretary, Education Department,
Toronto.