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THE CANADA
EDUCATIONAL MONTHLY
AND SCHOOL MAGAZINE.

APRIL, 1887.

STATE AID TO HIGHER EDUCATION.

BY THE VERY REV. PRINCIPAL GRANT, QUEEN'S UNIVERSITY, KINGSTON.

SOME years ago Toronto University announced through the Vice-Chancellor that its revenue was inadequate for its needs, and that it was about to demand more money from the Legislature that had already given it what used to be called "a magnificent endowment." The proposal seemed startling to those who had been contributing freely for years to the maintenance of universities doing precisely the same kind of work as Toronto, and in some directions certainly doing it better. They were willing that Toronto should have the advantage, in buildings and revenue, of an endowment, worth—in spite of the greatest mismanagement—nearly two millions, but that the Province should go on, indefinitely, doing its utmost to supplant private liberality, when it had been proved that one university was not enough for the needs of the country, seemed to them indefensible. What made the proposal all the more indefensible was that they could not shut their eyes to

the fact that the success of the other universities was the real motive of the new demand on the State. They were told that those institutions were actually "creeping up" to an equality of equipment with the one for which the State did everything. Such "levelling up," not at the public cost, but through private liberality, was an impertinence. The only way to put it down, and to maintain a due distance between the rightful heir and intruders was by getting another million or so from the Legislature for the one that stood on its dignity and did nothing for itself. This method of putting things right had everything to recommend it. No self-sacrifice was called for, except that which Artemus Ward declared himself willing to practise cheerfully. It would besides establish a precedent that would smooth away all future difficulties. Should any other university presume to go on developing, it would be easy to call for another million taken impartially from the pockets of the people, in

cluding those who preferred universities of a freer type, and who were showing the depth of their preference or faith by their works.

The other universities protested. They would have been destitute of self-respect if they had kept silence. Besides, the proposal received no favour from the general public. It would have fallen still-born, even had Queen's, Trinity and Victoria uttered no word of protest. When it was found that an appeal for Toronto University alone would be made in vain, a roundabout method of accomplishing the object was tried. It was resolved to divide the opposition. It was repeatedly stated that "the Methodists were the key to the position." In other words, if Methodist opposition could be silenced, it was believed that sufficient political support could be obtained for something like the original proposal. The Minister of Education called a series of conferences, to which representatives or delegates from the four universities, as well as from several divinity schools in Toronto, were invited. Ostensibly as the result of these conferences, the so-called "Confederation Scheme" was drawn up. The truth of the matter is, that no progress whatever was made at the first two conferences, and so far as could be ascertained from conversations with the delegates, no one expected any to be made at the third and last. However, in the interval between the second and third, the Confederation Scheme was drawn up, as the result of private interviews and a private gathering of delegates who happened to be in Toronto. Great was the astonishment of the representatives of Queen's, when the Scheme was produced in printed form at the opening of the third conference. The Chancellor and myself, however, remained, giving what little help we could on the details of the Scheme that had been accepted

by the majority. The first glance had been enough to convince us that it was not intended for and would not suit Queen's. Still, it was our duty to do all that could be done, and then to submit the Scheme to our constituents without a word. After a few days' delay, insisted upon by us at the close of the conference, in order that we might have time to explain to the Trustees and Council of Queen's that we were in no way committed, the Scheme was given to the public. As soon as it was presented to our constituency it was unanimously rejected. The more it was canvassed, the worse it looked. Some of our professors who favoured Confederation in the abstract, utterly rejected this particular concrete. Men, who had never agreed on anything before, agreed in condemning this new model of a university. Everything that has occurred in the two years that have passed since, has convinced us that, in the interests of the country, in the interests of university education, and in the interests of Queen's, we took the right position.

Last September, the Methodist Conference decided that the Scheme would do for Victoria, and the Government promised the necessary legislation. Doubtless, before this is printed, the proposed legislation will have been submitted to the House and be before the country. We have a right to hope that sufficient time will be given for consideration before it is voted on.

I have been asked by the Editor of THE EDUCATIONAL MONTHLY to state what attitude Queen's takes now. Though no meeting of the University Council or the Board of Trustees has been held since last September, I shall endeavour to comply with the request to the best of my ability.

Associations of graduates and of benefactors in different places have

met, and resolved that, should the Legislature re-open the University Question, a one-sided solution can not be accepted. The city council of Kingston, has passed resolutions asking the Legislature to confine its efforts to the definite field of practical and applied science, and to establish a School of Science in Kingston, as an integral part of its University policy. It also officially invited the surrounding municipalities to pass resolutions to the same effect. The councils, both town and county, complied very generally with the invitation, and I accompanied a delegation from them, and from associations of the benefactors of Queen's that waited upon the Government, for the purpose of explaining that I for one thought the request of the municipalities for a School of Science in Kingston most reasonable, in the event of the Government proposing to do anything, and that it seemed to me that their suggestion could be accepted by Queen's as a fair compromise of its claims. Thus, while nothing has as yet been done officially by Queen's since it announced its decision on the Confederation Scheme to the Government in May, 1885, I understand pretty well the mind of those who may be considered the constituency of the University.

So far, then, as I have been able to gather their mind, they would prefer that the Legislature should not vote any more money for University education. They believe, with the Municipalities Committee, that "private endowment is apt to secure the best service at the least cost; that it is permanent, and not liable, like State aid, to change as the views of Governments or Legislatures may change, and that it calls forth the noblest attributes of human character." They have none but the friendliest feelings for Toronto University, though convinced that its

exceptional position has cultivated in some of its weaker graduates an arrogance of tone towards other institutions that is not usual in gentlemen and scholars. They are sure that Toronto University is fettered, stunted, kept back from anything like free and full development, by its connection with what must, under present conditions, be a Party Government. Besides, from what is reflected of the will of the average voter on the subject, they believe that the Legislature will do much less for University College and the proposed new University Professoriate than their friends declare to be necessary. If the Legislature would vote a million or two, they might be able to do what they consider necessary at present. If it voted nothing, they could appeal to their numerous graduates and the wealthy men who appreciate at its worth University education. But, if it votes only a trifle, then all that is likely to be accomplished will be the checking of voluntary contributions. The growth of Toronto University will to a certainty be arrested. Believing all this, they are inclined to wonder that the graduates of Toronto do not ask the Legislature to set it free from its present political bondage, with the provision that the Minister of Education and other official members should be kept on its Board of Management as an acknowledgment of the rights of the Province in the institution. They do not, indeed, wonder very much, because history shows that those who enjoy privilege are slow to surrender it, even when it hurts rather than helps, and they also remember how unwillingly Queen's surrendered the Provincial grant it once had, although no greater blessing ever befell it than the taking away of the said dole. They are all now conscious that it was a blessing in disguise, though they still resent the

offensive manner in which the thing was done, the short notice given, and the injustice shown to men whose salaries were dependent on the annual grant.

This then is the view taken by Queen's men generally of State Aid to Higher Education. But, should the Government insist upon re-opening the question, then they are quite clear that anything short of a comprehensive measure would be wantonly unjust. The public meeting held in Kingston, in January, 1885, as soon as "the Confederation Scheme" was published, adopted this view, but at the same time insisted that if the Government adopted anything like the scheme before them, it should be made comprehensive, and include Queen's in its operation. By the establishment of the proposed School of Science, Queen's would be included, in the way most calculated to serve, with due regard to economy, the material interests of the Province, and absolutely in accordance with the principle that Governmental control must be co-extensive with Governmental expenditure. But, since this proposal was made, oddly enough, two other cities, that were not even represented at the conferences, have discovered that they would each be greatly the better of a School of Science. No doubt they would. And it is not for me to contest their claims. The Government must decide each case on its own merits. But it ought to be enough to quote on this point the language of the memorial of the Municipalities Committee:—

"In no other place than Kingston is such a school required as a matter of equal justice to and for the safety and protection of a university, built up by the people themselves against what would be the outside aggression of the Government itself.

"In favour of no other place has a whole section of the country demanded it on these grounds.

"And in no other place than the seat of a well established university can it be placed with equal economy and certainty of success."

Those who disregard these facts have made up their minds beforehand, and are ready to catch at anything as an excuse for doing nothing.

Having thus tried to indicate our attitude, I may add that, so far as we are concerned, it matters little what course the Government may take. Happily, the sources to which Queen's owes her existence and steadily growing strength are quite independent of political parties or Government favour. Queen's has been for nearly half a century a practical protest against sectarianism, political and ecclesiastical, and exclusiveness and routine methods in education. When injustice and intolerance have been arrayed against her, she has thriven, and she will thrive, because there are people enough in Canada who understand her worth, and who sympathize with her all the more when she does not receive fair play. All the responsibility is on the Government, and confessedly its path is beset with difficulty. The safe course, and, in the long run, perhaps the best for all parties would be to do nothing, except to free the Provincial University. But, if something must be done, and the compact with Victoria requires the establishment of a new professoriate, how can Queen's be ignored? Confessedly the country has ratified our decision to remain at Kingston. Can any Government say: "We shall aid Victoria directly and indirectly because it comes to Toronto? We know that you ought not to come, but none the less must we ignore you. Our principles are limited to locality." A strong Government may say so, but the position cannot be held permanently. We may be able in the meantime only to protest, but a good many Canadians will not disregard our protest.

ON THE ACQUISITION OF KNOWLEDGE.

BY PROF. WILLIAM CLARK, TRINITY COLLEGE, TORONTO.

IN the history of the creation of the world we read that when darkness was upon the face of the deep, the Almighty gave command that there should be light. It is the first fact recorded after the creation of the heaven and the earth; and there must have been some reason for this command being issued, and for its being recorded on the sacred page.

That reason is not far to seek. The light was commanded to shine upon chaos, not because it was needed by the great Worker. "The darkness and light are both alike to Him." But this is because He is Himself "light," and the "Father of lights, in whom there is no darkness at all." Light is the primary need of the worker, and the statement is as true in the intellectual and moral spheres as in the natural world. Whatever may be our position, our circumstances, or our responsibilities, our first requisite is knowledge.

It does indeed seem wonderful that any words should be needed to commend a truth so evident. Would a benighted traveller listen to us if we set ourselves to prove that the day-spring would bring him, neither cheer nor help him on his journey? Would a blind man be patient if one should seek to convince him that it would be no benefit to him to have poured upon his eyeballs that "holy light, offspring of heaven first-born," the sweetness of which he had never experienced, or perhaps, still worse, had even lost?

And yet there are strange prejudices lingering in men's minds against knowledge, and the seekers after knowledge. And foolish and irrational as those prejudices mostly are,

there is probably something in men's ways of pursuing knowledge which partially accounts for the error of its opponents; and it becomes us who desire the "advancement of learning" and knowledge, to understand what is amiss in our spirit or methods, that we may not needlessly cast stumbling blocks in the way of others.

Perhaps the hardest thing said of knowledge is that which comes from one who was free from the vulgar prejudices of the ignorant and thoughtless. St. Paul says: "Knowledge puffeth up," and if this statement were intended to be understood in a broad and unqualified manner, it would present a very serious difficulty. But it is impossible to believe that St. Paul intended to condemn the pursuit of knowledge as such, whether of things natural or of things spiritual. St. Paul was himself a highly educated man; probably for this very reason he was added to the number of the Apostles. On every occasion of writing to churches or individuals, he shows the most earnest desire to give them a complete knowledge of all that concerned their relations and duties to God and man. "I would not have you ignorant" (1 Cor.), he says, and this is the keynote of all his testimony. "Give heed to reading, to exhortation, to teaching," he says to St. Timothy (1 Tim. iv. 13), and on this subject there is no discord in the teachings of Holy Scripture. "Wisdom," says the preacher (Ec. i. 18), "excelleth folly as far as light excelleth darkness," and the wise man bids us "get wisdom, get understanding;" and again he says, "wisdom is the prin-

cipal thing, therefore get wisdom : and with all thy getting get understanding." (Prov. iv. 5. 7).

No doubt there is a kind of knowledge which puffeth up, that kind of knowledge which is sought for the gratifying of a morbid curiosity, as far removed from the noble ardour of the pursuit of truth as the pale light of the moon struggling through masses of clouds is from the full glory of the sun ; no more like the love of truth and wisdom than the vulgar inquisitiveness which would lead a man to read his neighbour's letters is like an enthusiasm for the highest form of literature.*

There is a kind of knowledge that puffeth up, namely that kind which is sought for the purpose of ostentation, which is seldom real knowledge, and which at any rate is acquired without any sincere desire that it should be genuine and true. Such students—if the name may be conceded to them—would rather have a false or corrupted kind of knowledge, if they could thereby make a greater display of their own superiority than they could by having possession of the truth. If this kind of thing can be called by the name of knowledge,

*Some good remarks on this subject occur in an article in the *Spectator* of Nov. 6, 1886, on "Mr. Balfour's Good Fairy." "We can imagine no worse name for that love of truth in the wide sense, which is the master impulse of human wisdom, than curiosity. Wisdom knows how much there is which a man ought not to pry into, which respect for his own nature forbids him to pry into, but you could hardly name anything 'insatiable curiosity' which renounced the gratification of trying to know anything whatever that it was possible to know, however unlawful the means, and however unworthy the end. Indeed, far from thinking even the higher speculation the noblest of all lives, except in the rare cases in which it is a man's true calling, the one thing in which he can help his fellow men, we should say that every pursuit to which a strong sense of duty drives a man, even if it be, as it sometimes is, the political life, is a higher and happier pursuit than the mere gratification even of the love of knowledge."

then indeed it must be condemned and detested ; and it must be shunned most carefully by those who have the greatest care for the diffusion of that which is knowledge indeed.

There is in some minds a kind of confused notion that the increase of knowledge, especially of the knowledge of nature, tends to irreligion, or even to atheism. If religious men have allowed such thoughts respecting knowledge, we can hardly wonder that the enemies of religion have so far improved upon them as to declare that "ignorance is the parent of devotion." If this were truly so, then indeed the worst things that have been said of religion would be true. But Scripture, reason and experience alike condemn the imputation. Ignorance is, doubtless, the parent of superstition ; but superstition is not only a counterfeit of true devotion, but its deadliest foe. God's service is a reasonable service. He is Himself truth and light, and just in proportion as we live in truth and in light do we live in Him.

And if it be said that knowledge of any kind has a tendency to produce irreligion, we will answer with Lord Bacon :* "It is an assured truth, and a conclusion of experience, that a little or superficial knowledge of philosophy (he is speaking of natural philosophy) may incline the mind of man to atheism, but a further proceeding therein doth bring the mind back again to religion,"† and he truly

*"Advancement of Learning." Works, (Ellis & Spedding) iii. 267.

†The same sentiment is similarly expressed in his Essay (xvi.) "Of Atheism." "It is true that a little philosophy inclineth man's mind to atheism, but depth in philosophy bringeth men's minds about to religion. For while the mind of man looketh upon second causes scattered, it may sometimes rest in them, and go no further ; but when it beholdeth the chain of them confederate and linked together, it must needs fly to Providence and Deity."

remarks in another place,* that so far is the "increase of natural knowledge" from being hurtful to religion, that it "leadeth to the greater exaltation of the glory of God," by making us better acquainted with His "great and wonderful works."

There is one argument against the pursuit of knowledge which may receive a moment's consideration. It is sometimes said that it is of no use striving to increase one's knowledge, since "he that increaseth knowledge increaseth sorrow" (Eccl. i. 18); in other words, the more a man learns the more he becomes aware of his own ignorance, the less contented he is with his actual attainments, the more also he feels how arduous is the way which has to be trodden before we reach the clear heights of truth. But surely we have here no argument which can prevail with men who know aught of true human dignity. Is it well that we should be ignorant, and satisfied with our ignorance? Is slothful ease and self-indulgence to be put into competition with truth gained with the sweat of the face? Every noble impulse within us protests against this supposition. In every age the men of royal minds have told us that there is something better than ease and freedom from pain.

"The happy man," says Aristotle,† "is not he who sleeps, but he who works; and the gods themselves are happy only when they are in action, for apparently they are not always sleeping, like Endymion." To the same general effect, Plato declares, "No one would wish to be always a child, even though he were promised all the pleasures which can be enjoyed at that age." And a writer of our own times,‡ has declared in language

deeper and stronger, because it has a higher inspiration: "All dignity is painful, and a life of ease is not for any man, nor for any god. The life of all gods figures itself to us as a sublime sadness—earnestness of infinite battle against infinite labour. Our highest religion is named the 'Worship of Sorrow.' For the son of man there is no noble crown, well-worn, or even ill-worn, but is a crown of thorns." It will not be easy to convince men who have drunk in such thoughts of human capacity and achievement, to forsake the pursuit of knowledge because it involves labour and sorrow.

But it is time to turn to the positive advantages of knowledge. And they are great and numerous. Even if we could not enumerate them, could we not say that knowledge in itself is a delight, a delight to the heart and mind as light is to the eye? "Truly," says the preacher,* "the light is sweet, and a pleasant thing it is for the eyes to behold the sun." When its rays are pouring upon us, we do not stop to consider how many advantages it confers upon us; we rejoice in them simply because they are a joy. And this is most emphatically true of real knowledge, for, as Shakespeare says, "there is no darkness but ignorance."†

And the longer we think on the subject, the more clearly does its greatness stand out before our view. Perhaps the one advantage which suggests itself first to almost every reflecting mind is the strength which comes from knowledge. Whilst ignorance is weakness, knowledge is power. Knowledge, as Bacon reminds us, is a part of God's power,‡ and so it is a principal element in human power. Knowledge itself is power. "Nam et ipsa scientia potentia est." So Shakespeare says, "Ignorance is the curse of God; knowledge, the

* "Interpretation of Nature." Works, iii. 221.

† Ethics, i.

‡ Carlyle, "Past and Present." Bk. iii. c. 4.

* Eccles. xi. 7.

† Twelfth Night

‡ Med. Sacr. Works, vii. 253.

wing with which we fly to heaven."* Who has not experienced many times in his life, the hindrances of ignorance and the advantages of knowledge? Who has not felt painfully the uncertainty, the feebleness, the helplessness, which resulted from ignorance? And on the other hand, when we know our work and all that is needed for its efficiency, we are like men treading a well-known path in the clear light of day. And besides, almost every one knows that the real value of work depends not merely upon the motive with which it is undertaken—doubtless a very important consideration—but also upon the amount of intelligence with which it is carried out. Even the most laborious and devoted zeal will be no compensation for the want of knowledge. One hour of thoughtful, intelligent labour is often of more real value than the heedless, inconsiderate or ignorant work which is spread over many hours.

Look at the question under the light of practical experience. To whom is it that we have recourse when we need guidance in any of the difficulties of life? To the man who, in our own judgment at least, understands his work; to the man whom we believe to possess a knowledge of the subject on which we require information or assistance. If we have a religious difficulty, we refer it to one who has some knowledge of theology, and whom we believe to have some practical experience of religion; to one who has made the nature of man and the revelation of God the subject of his most earnest and serious study. So with other needs. We will not voluntarily and intentionally put ourselves into the hands of one who knows nothing of the structure and functions of the human body, if we wish to be restored to health; nor will we knowingly put

the settlement of our worldly affairs into the hands of one who has no accurate acquaintance with the laws of the land.

But we may reason as we please on this subject, yet after all no one really believes that knowledge is an evil, and that it is better to be ignorant. The poet * may sing :

A little learning is a dangerous thing,
Drink deep, or taste not the Pierian spring.

But the truth is, and we know it quite well, that all knowledge and any amount of knowledge, provided it be real and true, is a help and a strength to us. We are ashamed of ignorance, sometimes perhaps unduly and foolishly ashamed, and so we strive to hide it, and thereby prevent ourselves from acquiring the knowledge which we need, and which we would gladly have men think that we possess; but even here we are confessing, sometimes in spite of ourselves, that "a wise man is strong, yea a man of knowledge increaseth strength."†

Having now disposed of some of these preliminary questions, we must look a little more closely at the subject, and ask more particularly and minutely *what we mean by knowledge*. And perhaps it will be sufficient if we confine ourselves almost entirely to the practical view. Without in any way disparaging philosophical inquiries into the possibility of knowledge, and the nature of that knowledge which we are capable of acquiring, it is sufficient for our purpose to assume that, for all practical purposes, we certainly have it in our power to gain real knowledge—knowledge so real and certain that we do not scruple to act upon it just as though it represented to us absolute truth. We do not forbid philosophers to theorize; and

* Henry vi., pt. 2.

* Pope, *Essay on Criticism*, ii. 15.

† Eccles. xxiv. 5.

they will do it whether we forbid them or not. But we take our own starting-point in the common consciousness and common sense of mankind.

Now, what do we mean when we employ this word *knowledge*. By knowledge we mean *certain perception*. This is Dr. Johnson's definition, "certain perception; indubitable apprehension," he defines it; and he quotes the words of Locke, the English philosopher, who says, "Knowledge, which is the highest degree of the speculative faculties, consists in the perception of the truth of affirmative or negative propositions." To the same effect Sir W. Hamilton* observes, "Knowledge is the mere possession of truths."

It will help us to grasp these definitions if we compare them with the descriptions of those two operations of the mind which are most akin to knowledge, namely, *belief* and *opinion*. By *belief* we mean that which we hold without any doubt on the credible testimony of others, not as the result of our own examination. By *opinion* we mean the judgment which we form on any subject, with respect to which we cannot attain to absolute certainty. It may amount to practical certainty; but if it is rightly called opinion, it can go no further. By *knowledge* we mean certain perception, not merely a judgment that the thing may probably be so or so, not merely a certainty, because we cannot doubt the testimony on which we have received the information, but a clear and certain perception of some existence, fact or relation, which we obtain through the medium of our sense, if the object is a material one, and by our intelligence if it is a principle or an abstract relation. "Knowledge," says Tennyson, "is of things we see." (*In Mem.*)

Knowledge is of various kinds. There is, first of all, the knowledge of simple facts, the most elementary kind of knowledge. Then there is the knowledge of the relation of these facts, the principles which underlie, connect and explain them. There can be no doubt as to which of these kinds of knowledge is the greater. Yet the more humble is not to be despised, for it is indispensable. It is true, on the one hand, that a mere accumulation of facts is of little value—is very nearly worthless. It is as useless as heaps of brick and mortar would be to a man who wanted a house and had no knowledge of the art of building. Yet the bricks and mortar must be there, or there can be no house, and so we must collect the facts which go to the building up of the structure of knowledge, although the facts will be barren and dead when there is no knowledge of principles to bind them together and make them an organized whole. A wise counsellor who wishes to lead another in the path of true knowledge will never omit to set these principles clearly before him.*

This is very much what we mean when we speak of scientific knowledge as the aim of all our studies. Time was when the word science provoked a sentiment of aversion, of opposition, almost of resentment. This time has now well nigh passed away. Science has invaded every province of knowledge and thought. And with right; for what do we mean by scientific knowledge? We mean knowledge which is accurate, systematic, methodical. We mean knowledge which results from the careful collection, comparison and co-ordination of facts. We mean what Bacon calls "a knowledge by causes," itself dead or barren, but

*"True knowledge," says Bacon, "is knowledge by causes." *Nov. Org. Aph. ii. 2; Works, iv. 119.*

*"Lect. on Metaph.," vol. i. p. 8.

which seeks to connect and harmonize all the phenomena of experience. Such a knowledge as this can never be evil, but only good. If such knowledge is attainable, or in any measure attainable, then as rational beings we can be satisfied with no other. It is sometimes, indeed, feared by the supporters of peculiar theories of religion or civilization that the spread of science will be the destruction of their cherished opinions and dogmas. No one who thus thinks can have any solid faith in the system which he professes. For assuredly science, in the sense in which we have described it, can destroy nothing which has a right to be preserved. No truth can be really in conflict with any other truth; and what is science but a method of arriving at truth, of guarding the seeker for knowledge against error?

By *what methods*, then, is knowledge best acquired? This is our next question. It is one which concerns us all more or less, but which obviously does most deeply concern the young. Of course, it does not concern them alone. Men must never cease to accumulate knowledge and to gain experience; and wise men will to their lives' end submit themselves to that discipline which is needful for the improvement of the mind and the strengthening of the will. And indeed no man is too old to unlearn something of his imperfect ways of thinking and working; no man is incapable of being taught how he may think better, act better, live better.

When we speak of the beginning of the acquisition of knowledge, we are using relative terms. This work is actually begun before we are conscious of it. At first we are little more than passive; and even when we become active, our activity is, for a considerable time, so guided by

others that it can hardly be said to be, in any complete sense, our own, or to be animated by any definite principles of which we are distinctly conscious.

There comes a time, however, when we have to consider what we are doing in this matter, and on what principles and by what methods we are conducting our work, of whatever kind it may be. Happy are they who have not, at such a time, to undo a great portion of all that has been done for them by others: happy if they have not to change, not merely their opinions, for in most cases this will be inevitable, but the very principles of their thinking, the very methods by which they have been labouring towards the light of truth and the certainty of knowledge. Be this as it may, it is for us to do our best to know and follow those principles and methods which have received the stamp of wisdom and experience, and to persevere in them with all the strength and energy of a resolute will. These methods have no longer to be sought for as an undiscovered land. To apply them, to work them out in our own life, can never be quite easy for any of us, until perfect self-abnegation is easy. As far as the knowledge of them is concerned, we have only to accept the conclusions of the greatest and wisest teachers of mankind and to verify them by our own experience.

A useful way of approaching these principles and methods will be found by the noting of the chief hindrances to the acquisition of knowledge, whether moral or intellectual. In pointing out the true character of these hindrances we shall at the same time be indicating the course which should be taken if we would attain true knowledge.

Beginning with the moral hindrances, there can be little doubt that the most common causes of human

ignorance and stupidity are conceit and sloth.* Either of these vices is almost sufficient, if it has full play, to produce moral and intellectual ruin; but the two combined, and they are

* Cf. Pascal, *Pensées*. (Ed. of Havet), xxxvi.

sometimes found in combination, are often destructive to everything that is best in human character. We have, therefore, no hesitation in placing among the foremost requirements in order to the acquisition of knowledge, a *humble mind* and a *willingness to labour*.

(To be continued.)

UNIVERSITY EDUCATION IN THE UNITED STATES.

BY CHARLES KENDALL ADAMS, PRESIDENT OF CORNELL UNIVERSITY.

THE great celebration of the two hundred and fiftieth anniversary of the founding of Harvard University has just called attention anew to the condition and tendencies of higher education in the United States. There were present at the festivities in the early days of November not only about 2,500 of the alumni of the college, but representatives from nearly all the other prominent institutions of learning in the land, as well as from several of the universities of the Old World. Never before were so many presidents of colleges and eminent professors gathered together in the Western World. The note that was sounded at the very beginning of the festivities continued to be heard to the end; and no one could have been in attendance without realizing, and in some degree measuring, the extent of the interest that is now everywhere felt in the methods of higher education. Harvard is not only the oldest and largest of our universities, but she is the leader and representative of a tendency that is exerting a vast influence on the other colleges of the land. Some account of this influence and tendency may not be out of place.

The early history of our colleges was shaped after the English model.

It has been estimated that within a very few years after the settlement of Massachusetts Bay the colony contained as many as a hundred men who had received the honors of Oxford and Cambridge. When, in 1636, Harvard College was founded by a gift of the Colonial Legislature, and given the name of a son of Emmanuel College in old Cambridge, it was but natural that the methods of the old colleges should be given to the new institution. The other colleges that in due course of time came to be founded took on similar characteristics. Nor was there any very striking or radical change of method or of spirit till past the middle of the present century. The applicant for admission was required to read easy Latin, and to know something of Greek and the mathematics. After his admission he was expected to devote four years chiefly to supplementing the frugal knowledge he had already acquired in those three great branches of learning. There was very little of the natural sciences, there was even less of the applied sciences; there was next to nothing of history. In short, until near the outbreak of our Civil War, it might have been said in plain descriptive prose, as has since been said in the epigrammatic propagand-

ism of the theory, that "a university is a place where nothing useful is taught."

But about the middle of the present century it came to be seen that the condition of higher education was not satisfying the demands of the country. Colleges had been multiplied in all parts of the land, as if it were the province of higher education to carry itself to the door of every man's home. The numerous religious sects felt the necessity of having schools for the training of the clergy. These schools were the victims of a somewhat active rivalry, and in consequence it was impossible to raise the low standard of scholarship that prevailed. Nearly all of the newer colleges had attached to them as an integral part a preparatory school, the business of which was to give students such meagre preliminary training as was necessary for admission to the college or university. Thus the colleges were able to make a very considerable show of numbers, though in many instances the rolls were made almost exclusively of pupils who might as well have been in any one of the primary or secondary schools of the land. But the deceptive character of this apparent prosperity could not long be concealed. When statistics came to be carefully brought together, it was found that the relative number of students in the higher courses of instruction was steadily growing less and less. It was also evident that there was a widespread feeling of discontent with the courses of instruction given. The clamour was everywhere heard that the classical tongues were no longer called for, that this is a practical age, that if students are not to be taught in the universities what they can turn to use in the affairs of life, they may as well get on without the universities altogether. This feeling it was which, ever growing deeper and more widespread, had the general

effect of reducing the number of students in all the colleges of the country. Young men everywhere were going into the professions without that preliminary collegiate training which in the early history of the country was considered a necessary prerequisite of success.

How should this evil tendency be met and averted? Many ways were suggested, and not a few were adopted. One of them was through the establishment of separate technical schools. In the older parts of the country several schools were endowed for the purpose of affording opportunities for special training to such as might have no opportunity or inclination to take the more orthodox course in arts. The Sheffield Scientific School at Yale, the Lawrence Scientific School at Harvard, the Chandler Scientific School at Dartmouth, the Stevens Institute at Hoboken, the Polytechnic Institute at Troy, the School of Mines at Columbia College, in New York, were all the fruits of this impulse. In some of these schools the course of study continued through three years, in others it extended, as in the old college courses, through four. It will be observed that there were two systems, even of the schools above named. Some of them were connected with colleges already established, others were entirely independent and isolated. As a rule, however, it may be said that in all instances independence went as far as to the establishment of separate courses of study for the separate schools. Students of the regular college course and students of the newly established scientific schools never met in the same lecture-rooms, although they might meet on the same college grounds, and might even be pursuing the same studies in common.

As a class, these newly established schools could not be regarded as very

prosperous. Whenever they were established in connection with one of the older universities, the students never seemed to feel quite at home in the companionship of the members of the older college. Whenever they were given an absolutely independent existence it was often found that the expense of establishing and keeping up libraries, museums and the other necessary appliances was much greater than the financial condition of the school would warrant. The result was that although there were a few very signal examples of success, the experiment, as a whole, could not be regarded as having changed the general drift.

Another series of efforts was made by establishing parallel courses of study in several of the colleges and universities already existing. One of the first to advocate such a change was President Wayland, of Brown University. He presented with great cogency the arguments which at a later period became very familiar to those engaged in educational affairs. The necessity of change in methods presented itself in two forms. In the first place, it was irrational that every student up to the close of his collegiate course should be required, on pain of forfeiting all chance for a degree, to take precisely the same course as that marked out for every one of his fellows. The method in vogue, it was urged, not only required every candidate for a degree to take a prescribed amount of Greek, Latin and mathematics, but it also gave him almost absolutely no opportunity of taking any more than the amount prescribed. The old curriculum was a hard-and-fast requirement that gave no possible play for different abilities and tastes. Such a method could never develop to the highest pitch of scholarship more than a very small number of persons in any class. Students are spurred on to their best

efforts only when their enthusiasms are moved; and a prescribed course, however excellent in itself, can never stir the enthusiasm of more than a limited number of those who are required to take it. The consequence is that we are brought at once to the second reason for a change—namely, the inability of the old method to draw within its influence any considerable number of those who, under a better system, would be glad to avail themselves of a course of university study. The very fact that the classes in college were everywhere growing less and less showed that the education given was not the education that was desired. The defect in the existing system, it was said, was open to the view of any one who would observe. There were large numbers of people who do not admit the superior efficacy of training in the ancient languages and in the mathematics, and who assert that large numbers must either go through life without the advantage of a liberal education, or the requirements must be so changed as to furnish the opportunities desired.

The agitation that ensued resulted in the establishment of parallel courses of study in several of the universities of the country. In some of the institutions favouring this method of meeting the new demand, what was known as a "Scientific Course" was provided for. Greek and Latin were either omitted altogether, or were required of the students in only very moderate amount. French and German were given a prominent place in the new requirements, and there was a generous introduction of history and the various natural sciences. In short, the effort was essentially the same as that which in Germany had resulted in the Real Schools, and the consequent admission to the university of students who had no knowledge of

Greek, and very little knowledge of Latin. The new courses extended through four years, and culminated in the degree of Bachelor of Science. There was also provision made for those who desired Latin, but had an antipathy to Greek. German and French were given the place held in the old curriculum by the Hellenic tongue, while the full quota of Latin continued to be required. This course led ordinarily to the degree of Bachelor of Philosophy. Finally, a fourth course was added, designed to substitute for advanced studies in the mathematics and in the natural sciences, studies in history and modern literature. Some two years in the preparatory schools, and about the same length of time in the university, were devoted to the modern languages, after which the time of the remaining two years was given to studies in literature and cognate branches. This course also led to a degree—that of Bachelor of Letters.

This method of solving the problems of higher education was adopted by a few of the older and by nearly all of the newer institutions. From 1850 to 1870 it was what might be called the predominant method. Though the older schools clung with a strong conservatism to the methods of the fathers, the newer colleges and universities in the middle of the country and in the West almost without exception adopted what may be called the System of Parallel Courses.

While the success of this system was perhaps such as to satisfy its friends, it was not enough to convert its enemies. The older institutions, like Harvard and Yale, and the other colleges of New England, practically assumed that the system of parallel courses was a surrender to Philistinism in which they could take no part. A few of them have maintained this position to the present day. All of the more prominent universities,

however, have felt themselves obliged to seek the same ends by other means. Harvard University has been the leader of this third movement, and the means by which its ends have been accomplished is known as the "Elective System."

Until about 1870 the courses of study prescribed for the degree of Bachelor of Arts gave to the students very little latitude for choice. In the fourth year the candidate had placed before him a number of subjects from which he was at liberty to select enough to make up the requisite amount of instruction. But the field of choice was limited, and the variety of studies was correspondingly meagre. This characteristic carried with it, of course, the impossibility of anything but very elementary work. A little Latin, a little Greek, about the same amount of the mathematics, a trifle of history, taught in a very dull way, for the most part from a very dull textbook, the elements of half-a-dozen of the sciences, including psychology and logic—such was the pabulum on which the college student in one of the older colleges was mainly obliged to be fed. It can hardly be considered very surprising that the relative number of students in college was steadily declining. But about seventeen years ago Mr. Eliot entered upon his administration as President of Harvard. It was understood that he was chosen to his position as the representative of a new and vigorous policy that had already, in some measure, been entered upon by his predecessor. That policy involved a multiplication of the courses of instruction given, and the offering of a substantially free choice of courses during the later years of the curriculum. Gradually this freedom was extended down nearly to the beginning of the course. Indeed, it has now come to include almost the

whole of the studies of the freshman year. Meantime it has been practicable to multiply the opportunities afforded the individual student. When everybody was taught as much as anybody it was impossible to do very much of any one thing. But as soon as freedom of choice was offered, it was found that students demanded advanced courses, and consequently advanced courses were provided. The courses in every branch of knowledge were so multiplied that in less than a score of years the aggregate number was three or four times as great as it had been when the reform was begun. The Harvard catalogue now shows an array of courses in history, in political economy, in the various sciences, as well as in the languages of Europe and Asia, that quite reminds one of the wealth of learning offered by one of the larger universities of Germany. It is thus made quite possible for the student to concentrate his work in such a way as not only to learn a little of many things, but also to learn much of the particular subject of his choice. The drift has been toward the German rather than toward the English methods; and in the freedom of choice now afforded the German limit has very nearly been reached.

While this change has been going

on at Harvard under President Eliot's inspiration and direction, a similar tendency has shown itself in those institutions which at first tried to meet the requirements of the age by establishing "parallel courses." It was found, not unnaturally, that the decision early in life to pursue a certain course of study was sometimes a premature decision, and consequently that room ought to be provided for subsequent change of purpose. The system of parallel courses, like the old classical courses, afforded no room for change of studies when once a course had been entered upon. It was everywhere found necessary, therefore, to give something of the same flexibility to the new courses that Harvard was giving to the old. At the University of Michigan and at Cornell University, the two most conspicuous and prosperous examples of the parallel course system, the first two years are for the most part prescribed, while the last two are for the most part elective. Thus the student is afforded a two-fold privilege of choice. He may decide upon one of the parallel courses when he begins his preparatory studies; then, after he has been two years in the university, he may choose with almost absolute freedom from the hundred courses that are offered.—*Contemporary Review*.

(To be continued.)

JAPAN.—A writer from Otzu says that the finest building there, as in many neighbouring places, is the school-house. The building is lighted from one side, and ventilated in all quarters. The pupils sit at desks of the proper height—two at each desk. The programme of studies in the common-schools embraced the three "R's," history geography, natural science, and, quite lately, gymnastic exercises. Singing is also a part

of the course. A six years' course is obligatory. In the next grade of school German and English are taught. The University at Tokio, and the medical school at Kioto, which has a hospital connected with it, both furnish the highest grade of instruction. Many of the professors at the university are German, and some of the chairs are filled by other foreigners. The medical school was started by a German, but is now carried on by the Japanese themselves.

WILL CULTURE OUTGROW CHRISTIANITY?

THIS is the question asked by Professor Upton in his thoughtful address to the students of a Theological College which has just entered on its second century of existence—Manchester New College. It is certainly a very fundamental question for theology to propose, for if it is answered in the affirmative, a Theological College will be concerned with explaining a creed which it can only offer, and of course with more and more of diffidence, to the acceptance of those who appear to be unfitted to survive in the conflict for existence. There may be men who can teach with energy and eloquence a doctrine which they fully expect to find less and less acceptable to the majority of mankind; but if there be such men, they must combine to a very singular degree personal energy with despair of the victory of truth. As a rule, the teacher who believes that the permanent current of men's thoughts is against him, will either distrust his own teaching, or despair of the learning capacity of ordinary men—and either condition of mind will be fatal to his power as a teacher.

Professor Upton, however, does not think that culture is destined to outgrow Christianity. He thinks that the tide of naturalism is beginning to ebb, that the belief in a being who, to use Mr. Spencer's phrase, is *above* personality rather than below it (whatever that may mean), is returning even to the high priests of evolution—nay, that, in Professor Upton's own happy phrase, it is simply absurd to expect "the sublime process of evolution to end in the melancholy fiasco of the generation, as its highest product, of a being utterly unsuited to his surroundings; a being who hungers and thirsts for satisfactions which

Nature is powerless to provide, and who in pessimistic despair longs at length to shuffle off the hated burden of existence."

But while Professor Upton chooses strong ground when he uses the very conception of evolution to refute the view that this process should have produced a religious being only to disappoint cruelly all the religious instincts it had fostered, he seems to us to ignore in some degree the strength of the evidence that for some time back culture has been so far outgrowing Christianity as to deprive a much larger portion of the cultivated world of its Christian faith than ever was deprived of that faith by culture, at least since the revival of learning. Bishop Butler, indeed, testifies to the existence of a fashionable world in the time of George II. when it was not so much as considered worth while to regard the truth of the Christian revelation as even deserving investigation—and some of the divines even of Butler's day were probably rationalists of the Deistic type. But even then it was not culture which had produced this decay of belief half so much as general torpor of conscience and worldliness of habit. Where life and thought were most vivid, belief revived. It was not then as it is now—the abundance of thought, the rush of fastidious criticism, the perplexity of the intellect among the multitude of counsels, the giddiness of speculative earnestness, the bewilderment engendered in the throng of competing opinion, which paralyzed men's faith. It was less culture than cynicism which paralyzed Christian feeling. But now it may be said in a very real sense that it is culture which endangers Christianity—the consciousness of the wideness of the field of knowledge,

of the number and minuteness of the difficulties in the way of conviction, the daunting certainty that not even the most learned of men can survey, much less grapple with, the multitude of the considerations which may be fairly and honestly said to bear directly on the truth or falsehood of the Christian creed.

Libraries may be collected on but one aspect of the question ; philology, scholarship, critical learning ask to be heard on one great class of questions ; philosophy, psychology, physiology put in their claims to a hearing on another ; then comes science with its claim to establish the *à priori* improbability, or if it be very rash it will say, impossibility, of the Christian story ; and then, finally, the student of mythologies, and of the various superstitions of the different savage tribes, claims to have his account of the matter heard, in order that the believer may learn from it a legitimate self-distrust. Amid this wilderness of evidence of all kinds, the man of culture not unnaturally gets dazed and paralyzed by all these cross-claims on his judgment, and so it happens that in his mind culture tends to outgrow Christianity. In relation to all aspects of it he finds in himself a number of half-matured thoughts and half-finished trains of reasoning, and his mind becomes a mass of suspended judgments and postponed investigations. Is it or is it not likely that, in this sense, culture will outgrow Christianity? It can hardly be denied that in our own age culture has frequently outgrown the *political* doctrines of all ages, the *economical* doctrines of the last age, and the *social* convictions on which the cohesion of society rested ; and that in many cultivated minds, nihilism, socialism, anarchism, have been the result, while, in a very much larger number of cultivated minds, a deep despair of ever attaining to certainty solid enough to

convince the multitude, has superseded all the old and firmly established convictions. Will not the same process unsettle still more effectually religious conviction? Will any clear guiding belief grow out of the crowd of suspended beliefs in which the tournament of controversialists has ended?

We should be disposed to think that culture would very quickly outgrow Christianity, if Christianity did not positively prevent men from sitting still only to imbibe culture. If life were limited to the study of theology, the study of theology would soon become impossible. But as Christianity was from the very first mainly a gospel for the poor and for those who were not poor only so far as they found themselves unable to separate themselves from their fellow-men, so Christianity now will outgrow culture, because it supplies the one kind of food requisite to turn culture from a solvent of all action into the light and safeguard of wise action. Just as the great German thinker, to whom Professor Upton alludes at the end of his lecture, found in the imperative demands of the *practical* reason the real key to the insoluble riddles of the speculative reason, so we may say that all great thinkers have found in the needs and urgencies of the practical life the solution of the insoluble difficulties of religious thought. Professor Upton himself contends that it is the witness in us to the force and urgency of something deeper and higher than ourselves in the act of resisting sin or straining after duty, which proves to us the reality of God, and renders impossible the view of the idealist that we are merely following the beckoning of our own spiritual fancies. Well, that is very true ; but it would hold, we think, of the claim of Christianity on us in a sense which Professor Upton appears to ignore, when he makes light

of the claim of Christianity to reveal to us not only the love of a spiritual father, but the grace of an atoning sufferer who died a "ransom for many." It is in the practical power which Christianity applies to stir us to combat with overwhelming evils, and to assuage the sufferings of penitent guilt and self-abhorring contrition, that it brings certitude to the suspended judgment of pure culture, and reveals the force which even the impotent paralytic of the intellect may share. Christianity reveals its meaning not to the thinker, as such, but to the man who is overwhelmed by the sense of the needs and miseries of his race, and who grasps at that power, as a power from on high, which will enable him to grapple with these. Its language is not, "Sit and

be convinced," but, "Rise and walk." And already we seem to see evidence that in this age, as in other ages, we shall find our Christianity again in the strenuous effort to meet the violence, the impurity, the wretchedness, the poverty, the squalor, the despair of the most miserable of our people. As Christianity wanes at the West End of London, it revives at the East. It flickers and goes out in the breast of the student, while it flames up in the heart of the man who is really attacking evil in its worst strongholds. Culture is a wet-blanket for Christian faith only so long as the attitude of the mind toward evil is passive. It becomes subservient to Christian faith in the heart of the man who is really following in the footsteps of his Master.—*Spectator*.

THE POETS AS HELPERS.

IN this world of ours, with its temptations to conquer, its problems to settle, and its personal struggles to turn into triumphs, we need all the help we can get. Carlyle has written about the hero as pagan divinity, prophet, poet, priest, man of letters, king; but most of us, in our efforts to be heroic, do not expect to reach the honours connected with any one of these names. Our heroism must be shown in the daily round, which, even for the greatest men and women, is likely to contain much commonplace drudgery. When we have done the best that individual character can do, we still need help; and we turn for it to the heroic and the noble in religion and in ancient and modern history. Prophets and evangelists and ministers of our divine religion, leaders of thought, and poets and other writers, must aid us on the upward way.

The "poet" was once the "maker," and his creations at their best ought to be helpful makings. High poetry can come only from a mind in some sense high. The poet ought to be a hero, now bold, now gentle and winsome, but never a poltroon or a superfluity. His function is somewhat akin to that of the soothsayer, the teacher, the leader. Lowell, in his *Fable for Critics*, compares our modern Whittier with the minstrel Taillefer, who led the army at the battle of Hastings:

Our Quaker leads off metaphorical fights
For reform and whatever they call human
right;

Both singing and striking in front of the war
And hitting his foes with the mallet of Thor.
Preaching brotherly love and then driving
it in

To the brain of the tough old Goliath of sin,
With the smoothest of pebbles from Castaly's
spring
Impressed on his hard moral sense with a
sling.

Yet Whittier, on his other side, is sweet and gentle, winning us by mild loveliness of thought and song. However, he is no "idle singer of an empty day," "neither for God nor for his enemies," but one who has suffered while he battled in life, and therefore wants to help his brothers while they struggle upward. This wish has been shared by many a poet, from semi-mythical Cædmon to Longfellow, and from Dante to Hugo.

We should not forget, of course, that the poet is not always bound to preach, but may and must sing merely for the singing's sake. "Beauty is its own excuse for being," and nowhere is this law more potent than in verse. The poetry of the beautiful is as old as literature and as fresh and spontaneous as a flower by a brook. The unsullied pleasures of nature God meant us to enjoy, and he gave poets their powers that they might spread and perpetuate the pleasures we find in the tinted cloud, the twilight ocean, and the song-bird at dawn. But yet "the poetry of the beautiful" has something in it beside external nature for its theme. The highest function of nature is to teach sound lessons to the soul. Said Emerson :

The brook sings on, but sings in vain,
Wanting the echo in my brain.

The beautiful in life and action is nobler than the beauty of tree or brook, and will be more enduring. Mental and spiritual beauty do not depend on fleeting states or fortunate circumstances. They will outlast the very world on which we live, to which our thoughts so often go out.

Poetry, in its highest estate, looks toward the ideal rather than the real, or toward the ideal in the real. In very truth it looks "up and not down, out and not in, before and not behind," and therefore, by its mission

and nature, it "lends a hand." The purely spiritual is the purely ideal at its best. Ideal spiritual loveliness is at once the vision of the Christian and of the poet.

Poetry addresses itself to the mind and soul at their highest. Sentiment is universal, and always will be universal, notwithstanding crime, and despair, and cold indifferentism. The ideal is the realest thing in the world. The treasures we bear in our heart of hearts are not stocks, houses, clothes, food, the material; they are things of sentiment and imagination. The "tender grace of a day that is dead" is more than every earthly possession. The glory of a cherished hope is "nearer than hands and feet." The "light that never was on sea or land" is the light that illuminates the holy of holies in our inmost souls. In their idea of all this truth the poet and the preacher are at one. "There are more things in heaven and earth than are dreamed of in Horatio's philosophy." "Eye hath not seen, nor ear heard, nor hath it entered into the heart of man to conceive" the things in store for us. The "monitions of the unseen," as Jean Ingelow calls them, teach us to say: "Look to it: let us mend our ways." An empty dream is one thing; but the inner sight of an ideal glory is that which encourages us to try to be perfect as our Father in heaven is perfect.

Thus the poets become our helpers when they point us to things higher and truer and lovelier. They restate for us the lessons we need to learn over and over again. Every race and every time must have its own poets, just as every new generation must have its own teachers. Dante and Milton taught those of their own time, and Gray and Wordsworth those of later days. They still teach us, but we also need our Longfellows, Whitiers, Emersons, Bryants, Tenny-

sons,—for the poet of *In Memoriam* and the *Idyls* cannot commit suicide,—and Brownings.

It is unnecessary—indeed, it would not be possible—to make copious quotations, in a single article, to prove that the poets are veritable helpers, and that the greatest of them, in our own day and in previous days, battle firmly and constantly on the side of truth, righteousness, and noble living. An atheistic, materialistic, or pessimistic poet is seldom found near the top of Parnassus, though he may grovel and whine at the foot. We may hardly agree with the once popular Philip James Bailey that

Poets are all who love, who feel great truths,
And tell them; and the truth of truths is love,

but the converse is certainly true: that none can be a great poet who does not feel the greatness of truth, and the truth of eternal love, and who does not desire to tell the world what he himself feels.

Instead of multiplying examples, let us take but one, Robert Browning, who is at the present time the most studied of contemporary poets. There are Browning clubs in many cities of England and the United States, and half a dozen books have been published within a twelvemonth, devoted to the elucidation of his writings. Browning is not studied faithfully and almost reverentially by his admirers merely because he is possessed of the lyrical faculty, is master of a quaint descriptive power, and is a dramatist of an original order. Of much of his work could it be said in truth: "The play, I remember, pleased not the million; 'twas caviare to the general." There is a pleasure in cracking a hard nut, in reading and praising a poet so far from ordinary poets that he seems to confer a sort of distinction on the members of his cult. Among the

followers of Browning, of Emerson, are some silly, attitudinizing pretenders, who are hunting after eccentricity more than after strength. But the widespread study of Browning is chiefly due to the fact that he is a manly, helpful force, who has studied the world and its future, and has something to say to its toilers. His most characteristic short poem, "Rabbi ben Ezra," is simply a lofty statement of the trustful philosophy of a noble soul:

Our times are in His hand
Who saith, "A whole I planned,
Youth shows but half: trust God: see all,
nor be afraid!

Then, welcome each rebuff
That turns earth's smoothness rough,
Each sting that bids nor sit nor stand but go!
Be our joys three parts pain!
Strive, and hold cheap the strain;
Learn, nor account the pang; dare, never
grudge the throe!

For thence—a paradox
Which comforts while it mocks—
Shall life succeed in that it seems to fail.
"I, who saw power, see now love perfect
too:

Perfect I call Thy plan:
Thanks that I was a man!
Maker, remake, complete—I trust what
Thou shalt do!"

Let us cry "All good things
Are ours, nor soul helps flesh more, now,
than flesh helps soul!"
Thou waitedst age; wait death nor be
afraid!

Earth changes, but thy soul and God stands
sure.

So take and use Thy work,
Amend what flaws may lurk,
What strain o' the stuff, what warpings past
the aim!

My times be in Thy hand!
Perfect the cup as planned!
Let age approve of youth, and death com-
plete the same.

This great poem of trust and manly spiritual bravery suffers by such sampling as this; it must be read as a whole; but even these scattered lines show its character and power. This is the poet who, instead of saying with Swinburne, "What love was ever so deep as a grave?" tells

us, in "Evelyn Hope," that God above "is great to grant, as mighty to make," and that he "creates the love to reward the love," so that he may be trusted for an eternity in which world after world shall perish. Browning believes that "love leads the soul to its highest perfection;" he looks forward to scaling "other heights in other lives, God willing." Nor does this hope merely brighten an earthly love, for "all things suffer change save God and truth." "I trust," he says, "in the compensating great God," who "were good enough, though the world casts us out." Before God "all service ranks the same," for he "ne'er dooms to waste the strength He deigns impart." Browning's philosophy of life is not that of mere pleasure, for "all is beauty, and knowing this is love, and love is duty." Duty shows us that "man was made to grow, not stop,"—"why stay we on the earth unless to grow?"

Life is probation, and this earth no goal,
But starting-point of man."

"What's time? Man has forever;" and in that forever the earthly part is as true as the heavenly, and as much a part of God's plan. "Grapple with danger whereby souls grow strong," cheered with the thought that ultimately "the battle element must pass away."

Any one of the books of selections from Browning, in the hands of a thoughtful reader, could be made to multiply such lines as these, and perhaps to furnish better ones. In the long—and by no means uniformly praiseworthy—row of the poet's works are occasional faults; for Browning at times seems wilfully crude, careless, and obscure. But whether he writes in one way or in another, in his own person or in his dramatic characters, he constantly holds up the ideal element, as defined in the beginning of this article:

I count life just a stuff
To try the soul's strength on.

This poet, and the company of nobler poets, would help us to try harder than ever before to make the most of ourselves, and make the most of life. Emerson says of the poet who in turn transmits his lesson to his fellow-man:

Over all his crowning grace,
Wherefor thanks God his daily praise,
Is the purging of his eye
To see the people of the sky:
From blue mount and headland dim
Friendly hands stretch forth to him,
Him they beckon, him advise
Of heavenlier prosperities
And a more excelling grace.
Teach him gladly to postpone
Pleasures to another stage
Beyond the scope of human age,
Freely as task at eve undone
Waits unblamed to-morrow's sun.

—S. S. Times.

NEVER use a hard word where an easy one will answer as well.

IN consequence of the success of the Township Institutes held in East Victoria last October, it is proposed to hold one for the Township of Ops and Town of Lindsay, and another for the Township of Somerville, during the last half of 1887. It is proposed to hold the former at Lindsay, on Friday, Sept. 16, subject to change of date if necessary.

THE County Council of the County of Victoria has provided forms for monthly reports to parents, for all the schools in the county.

THE tap root of a system of government in school is to furnish all with employment that is interesting to them, and at the same time conducive to their highest mental and moral development. To keep the imps of mischief away, put the angel of business on guard.

OVER-ELABORATION IN PRIMARY TEACHING.

WILLIAM J. DESMOND.

IN presenting the topic assigned me, I wish it understood that the over-elaboration criticised has been observed in the lower grades of city schools. In the average district or mixed school the tendency is more likely to be toward under-elaboration. The faults to which attention is called are worthy of criticism, and are dangerous, not because they are wide spread, but because the primary teacher who most indulges in them is too often the model for a host of weaker imitators.

The new education brought us out of an idolatry of words only to deliver us too often to an idolatry of things; as though the teacher who failed to vivify the word could not fail to vivify the thing; as though an object may not be as unmeaning a symbol as a word. "The mind," says Carlyle, "sees in an object what the mind brings the power of seeing." But, "Ideas first, then words," "Use objects to get thought," are interpreted to mean a multiplying of objective illustrations, a piling up of apparatus for so-called sense culture. Theory and practice are so different that these excellent principles, the wisdom of the sages, are constantly being wrecked on the sea of practice. It is consoling to believe that "a grand and noble end will wisely control all means to it." Yet every great principle of education has suffered from extreme and mistaken application. There is still the old groping in the darkness for patent methods and rules of thumb, the follow-my-leader hunt for devices with a pretended reference to some faintly understood glittering generality of pedagogical polity.

If we once clearly understand that every truth has limitations, that the wisest method may be used to excess, we shall have done much to guard against the vacillating tendencies of educational practice.

Our sterling principles of education we have always with us, but our methods,—"no man knoweth whence they come or whither they go." No sooner am I familiar with the teaching of technical grammar than the craze for language lessons sets in. Spelling was taught by the old fashioned spelling book, spelling down methods, when the wave of progress carried out the book. Now when one has made himself a crack teacher of spelling, without a book, behold the revised spelling book comes sneaking back. So it was with mental arithmetic. We had it; we had it not; and now we have it once again. It is remarkable how easily these kinks come and go. Our leaders ride their hobbies in and out.

G. Stanley Hall examines 600 little children in the Boston public schools, and, as a result, finds that 90 per cent. of these do not know where their ribs are. Then the cry is raised: "What is the use of teaching these children to read, when they do not know where their ribs are? What will become of this great American republic, if children are to grow up without being taught where their ribs are?" So the blushing school-ma'am is set to work to develop the ribs. It is long since we dethroned the object lesson. It once had lordly sway. The porosity and non-transparency of bread became household facts. Children were everywhere being led to see that a

horse had four legs, one on each corner and a tail in the middle, behind.

Years ago pupils began the study of arithmetic and other branches by learning a series of definitions. I was taught that arithmetic is the science of numbers and the art of computation. To make this perfectly clear, I had further to learn that science is knowledge systematized and explained. I have never forgotten these definitions and I think I never will, though it took years to make them full of meaning. That was the day of the old education, when the mind was early furnished with a store of true and matured forms to which a growing experience gave greater significance; the day of faith in text-books and lesson hearing. There was but little illustration, objective teaching, or stimulation of the perceptive faculties.

Then came the light of the new education. No more memorizing; out with the text-books; in with the objects,—splints, beans, shoe-pegs, corn, sand, stones, numeral frames, charts, globes, pictures, colours, moulding boards, anything and everything—the more the merrier. The child will now learn by doing. All over the country the festive educator beamed with joy as he heralded the era of “things before words.” “Create a need for a term before giving it.” “Never tell a child anything it can find out for itself.” These principles are so incontestably true, *with limitations*, that the poor teacher must perforce accept them. It is their acceptance without limitation, that has led to the over-elaboration so characteristic of the primary work of to-day.

The teacher at first snuffed dubiously at the boxes of new and untried apparatus. She of the old régime had her trade to learn over again. The mighty work of “developing”

began. The child was told nothing that by hook or crook could be squeezed out of him. The plan is, develop what you want to teach the pupil, that is, get him to tell it to you, and then feed him on his own strippings. Hours for developing, but not one minute for direct telling. Be fertile in devising means of illustration. Seek to make the simple, simpler. Have your pupils boom along impelled by the joy power. That primary school in Vienna supplied with \$25,000 worth of apparatus for illustrative purposes is held up as an ideal. I visited a class of beginners where the teacher had a case of twenty-two different sets of objects for number work, to say nothing of devices for teaching reading and language. $2 + 2 = 4$,—a fact great in its simplicity. But bring on the splints and counters, the shoe-pegs and corn, the teacher in a flurry of enthusiasm; and see the unfortunate fact put through the agony of development. “Nine” is before the class. It is to be developed. Momentous occasion! The class is worked up to a pitch of expectant enthusiasm. The child, after skilful manœuvring, is led to see that this number is made up of nine ones. They are counted and fondled lovingly—almost personified. It is then separated into two fours and a one—poor little *one*, he has no brother! So the development proceeds, if any time remains.

Arithmetic becomes number work; geography, place lessons; grammar, language lessons; spelling, talking with the pencil. Technical terms and difficult words are rendered into baby talk and nursery gabble. Courses of study are overhauled, so that the simple may precede the complex, and each teacher grades her work with the same view. The teacher acquires a power of detecting shades of difficulty, and always pro-

ceeding from the simple to the less simple by infinitesimal degrees. I have heard an institute put in an hour discussing whether $6 - 3 = 3$ or 3 from $6 = 3$ is the simpler form, and the arguments adduced would delight the scholastics of old, while one not of the elect thought "strange, such a difference there should be twixt tweedledum and tweedledee." The road to knowledge is no longer rocky and uneven. It is boulevarded in the highest style of the art. I remember listening for thirty minutes to an exercise with a class of young pupils. There was animation and interest. Pictures, objects and charts were liberally used. Not being clear as to the object of the exercise, I asked the teacher. She said: "I wished to develop the word 'man,' but, dear me, it will take another lesson." This brings to mind Dr. Stearns' story of the boy who was asked on his return from school: "What are you studying, Charley?" "Ain't studying anything," he said. "What! don't you learn anything at school?" "Oh, yes! learn what I allers knowed."

You find these exponents of a mistaken gospel of the new education in all schools. There is the teacher into whose room it is safe at all times to bring the average visitor. Her smile and manner are all the books prescribe. She is always beaming and lovable. She is never at a loss for some interesting point to bring before the class. There is a maximum of talk and minimum of study. The unsophisticated visitor comes away thinking what a pleasant teacher she is. Her class are so much interested in their work! How different from that stern Miss Sit-up-straight, in whose room there is no rest for the wicked and very little for the just! Yet when the principal goes round to grapple up the results of the year's work, Miss Sit-up-straight's class aver-

ages up in the 90's, while the pretty teacher explains away her 50's by showing the principal an article in her favourite school journal, showing that true culture and mental growth are not to be measured by per cent. These are the folly of examination cranks, and machine teachers. If the examination interferes with our theories, so much the worse for the examination. It must go. We rise superior to it, and teach so that the examiner gets nothing.

The mistakes are in these directions:

1. "There are few things so vicious as the attempt on the part of teachers to coax pupils' attention by supplying a perpetual fascination through devices or personal favour."

2. Instead of leading the child up to higher intellectual levels, the teacher comes down to amuse below the mental capacity of the pupil.

3. There is an over-elaboration of simple things, with illustrations too numerous and too babyish. We are not training to good mental habits when an exercise leaves a class in a state of hazy repletion.

4. Everything is brought ready made to the mind. There are no difficulties. It is goody on a spoon. Sugar candy teaching in the lower grades means dyspepsia in the upper,

These are the evil tendencies of the new education, they must be checked. It is most necessary, as Antisthenes says, to unlearn evils. Our reaction from a tyrannical system of teaching has made us forget that the end of teaching is not to place certain information in the mind of the pupil in the easiest way possible, but to attend to its retention and assimilation, and be sure that the process strengthens mind and character. If a pupil is not capable of walking alone, nothing he can have to show can rescue his school training from condemnation. The world of experience presents difficulties for

mastery, and the power acquired in mastering those of the school is here helpful. The youth for whom the rough road of knowledge has been made royal finds himself handicapped in the struggle. The highest function of the teacher is to make himself unnecessary,

What President Eliot calls the "Calvinistic" theory in education is not advocated. By all means lawful, make school interesting and attractive, but let it be the interest and attraction which the stimulus of healthy exertion always brings. Our pleasantest school memories are of hard winters' work in meeting and over-coming difficulties. We live in the pleasant labours of the past. I have not caricatured a present tendency, to become an alarmist. John Stuart Mill says: "When the principle of making easy and interesting is pushed to the length of not requiring pupils to learn anything but what has been made easy and interesting, one of the *chief objects* of education is sacrificed." And further he says: "The new education, as it seems to me, is training up a race of men who will be incapable of doing anything which is disagreeable to them." Dr. Stearns

predicts: "At no remote period a reaction will set in against this foolishness of teaching to which the developing methods lead, and, after the manner of reactions, will be likely to sweep away a good deal that is excellent with the mass of follies it will drive out."

I might multiply quotations from other eminent modern thinkers. No one can read the reports of recent state and national educational conventions without feeling that this pathological tendency of the new education is widely recognized. It is becoming necessary to warn teachers not to dilute the castor oil of difficulty with too much of the sweetness of method.

The old education at its best forced formulated knowledge on the child. A germ of good seed was planted by the apostles of the new education when they proposed to replace formalism by "thoughts that breathe and words that burn." But the new education, in the hands of its mistaken devotees, makes the teacher a variety show of "sounding brass and tinkling cymbal" and the child "pleased with a rattle and tickled with a splint."

—Wisconsin *Journal of Education*.

UNCONSCIOUS NEEDS.

IT may be thought that with so many needs of which men are fully conscious, and which they are eagerly endeavouring to supply, it is somewhat superfluous to recount or consider those of which they are unconscious, and which cannot therefore trouble or distress them. If they cannot, with all their efforts, respond to the many needs which they feel, why lead them to search for others of which they know nothing? Yet the truth remains, that the deepest and most pathetic needs of

humanity, those which appeal most loudly for succour to such as can discover them, are largely unfelt and unknown by the needy ones themselves.

This unconsciousness of real necessities is not confined to childhood. The youth entering active life has many conscious wants. Full of vitality, he desires to put it forth; he craves success in his enterprises; wealth or fame or love or glory seem to him brilliant possibilities for which he will strive. Yet none of these things are so essential to his welfare

as others of which he is profoundly unconscious—a firm moral principle that shall enable him to resist all allurements to evil; patience, perseverance, industry, economy, a kindly disposition, a love of justice, a benevolent heart. Whoever helps him to attain his conscious wants may benefit him and earn his gratitude, but he who can arouse within him a sense of the deeper needs of his nature and help him to supply them, is his truest friend and benefactor.

This unconsciousness of the deepest needs is the greatest foe to all growth and improvement. The contentment of the slave with his chains forges them more firmly than the tyranny of any master can do. It is when the real need for liberty¹ becomes also a conscious need that the era of freedom has begun. So with other evils; as long as we are unconscious that they *are* evils, content to abide in them, taking them as matters of course to be accepted, instead of foes to be conquered, so long they will retain their power over us. He who arouses us from this torpor, who shakes us out of our self-satisfied condition, even at the risk of disturbing our passive ease and comfort, renders us a far greater service than if he ministered to a thousand wants which our fancy is constantly suggesting.

“THE nation,” says the *American Journal of Education*, “has its roots in our public schools, and national life is being fed from this source. Whatever to-day we put into these schools will manifest itself in the national life of the next generation. As the life of a nation consists in the virtue of its people, it is the duty of every citizen to see that the system of popular education established by the State affords that moral education which alone can give dignity and virtue to the citizen, and secure ‘good government through good citizenship.’”

If this be true, benevolence has a farther reaching service to render to mankind than is usually supposed. Not merely to listen to complaints, to relieve conscious suffering, and to supply recognized deficiencies, is her appointed work, but also to detect the poverty that fancies itself rich, the ignorance that thinks itself wise, the grievances suffered unknowingly, the wrongs inflicted unthinkingly, the sins committed without remorse, the woes endured without effort to avert them. These are, indeed, needs that should appeal to every kind and generous heart. There are men and women who cannot hear of a wrong without longing to set it right, whether that wrong is openly known and felt or not. It may be a down-trodden child unconscious of its abuse, or an oppressed race which knows not of its oppression, or a soul sitting in darkness that never heard of the light—their sympathies go out to the needy one, and they long to help him, even though he desires it not. It is this spirit which is to regenerate the world. The unconscious needs of mankind are crying aloud to those who have ears to hear and heart to respond, and benevolence has no better or greater work than to reveal these needs, and to assist in providing for them.—*Philadelphia Ledger*.

WHILE a word is yet unspoken you are master of it. When once it is spoken it is master of you.

IMPRESS upon their minds that tardy pupils make tardy men and women—that tardiness will produce negligence and carelessness; that in being tardy at school, they are forming the habit of going through life tardy, always behind time, their work always crowding them to such an extent that they will never in their lives get ahead of it, and have a resting spell.

NOTES FOR TEACHERS.

THE BEE'S STING A USEFUL TOOL.—From lengthened observations, Mr. W. F. Clarke, a Canadian, has come to the conclusion that the most important function of the bee's sting is not stinging, but its use by that wonderful creature as a tool. Mr. Clarke says that he is convinced that the most important office of the bee's sting is that which is performed in doing the artistic cell work, capping the comb, and infusing the formic acid by means of which honey receives its keeping qualities. The sting is really a skilfully contrived little trowel, with which the bee finishes off and caps the cells when they are filled brimful of honey. This explains why honey extracted before it is capped over does not keep well. The formic acid has not been injected into it. This is done in the very act of putting the last touches on the cell work. As the little pliant trowel is worked to and fro with such dexterity, the darts, of which there are two, pierce the plastic cell surface, and leave the nectar beneath its tiny drops of the fluid which makes it keep well. This is the "art preservative" of honey. Herein we see, says Mr. Clarke, that the sting and the poison bag, with which so many of us would like to dispense, are essential to the storage of the luscious product, and that without them the beautiful comb honey of commerce would be a thing unknown. This is certainly a most wonderful provision of nature.—*School Newspaper.*

HOW TO EAT WISELY.—As a universal rule in health, and with very rare exception in disease, that is best to be eaten which the appetite craves or the taste relishes. Persons rarely

err in the quality of food eaten; nature's instincts are the wisest regulators in this respect. The great sources of mischief from eating are three—quantity, frequency, rapidity—and from these come the horrible dyspepsias, which make of human life a burden, a torture, a living death. By eating fast, the stomach, like a bottle being filled through a funnel, is full and overflowing before we know it. But the most important reason is, the food is swallowed before time has been allowed to divide it in sufficiently small pieces with the teeth; for, like ice in a tumbler of water, the smaller the bits are, the sooner they are dissolved. It has been seen with the naked eye that if solid food is cut up in pieces small as half a pea, it digests almost as soon without being chewed at all, as if it had been well masticated. The best plan, therefore, is for all persons to thus comminute their food; for, even if it is well chewed, the comminution is no injury, while it is of great importance in case of hurry, forgetfulness or bad teeth. Cheerful conversation prevents rapid eating. It requires about five hours for a common meal to dissolve and pass out of the stomach, during which time this organ is incessantly at work, when it must have repose, as any other muscle or set of muscles, after such a length of effort. Hence persons should not eat within less than a five hours' interval. The heart itself is at rest more than one-third of its time. The brain perishes without repose. Never force food upon the stomach. All are tired when night comes. Every muscle of the body is weary and looks to the bed; but just as we lie down to rest every other part of the body, if we, by a hearty meal, give the stomach five

hours' work, which in its weak state requires a much longer time to perform than at an early hour of the day, it is like imposing upon a servant a full day's labour just at the close of a hard day's work. Hence the unwisdom of eating heartily late in the day or evening; and no wonder it has cost many a man his life. Always breakfast before work or exercise. No labourers or active persons should eat an atom later than sundown, and then it should not be over half the midday meal. Persons of sedentary habits or who are at all ailing, should take absolutely nothing for supper beyond a single piece of cold stale bread and butter or a ship-biscuit, with a single cup of warm drink. Such a supper will always give better sleep and prepare for a heartier breakfast, with the advantage of having the exercise of the whole day to grind it up and extract its nutriment. Never eat without an inclination.—*Hall's Journal of Health.*

HINTS TO OFFICIALS AND TEACHERS.

"I don't care how fine a scholar a person is, if he lacks character he has no business in the school-room."

It was our old friend, Mrs. Gray, who made the above remark, and I had scarcely time to join the group surrounding her when the lady continued:

"Now just let me tell you a few plain facts. No class of people exercise so direct and lasting an influence for good or evil as teachers. Therefore no class is so important a factor in the solution of human progress. The teacher is, to a great extent, responsible for the future of the child, for he not only receives him at so pliant an age, but has control of him for so long that he may be said to mould his character.

"Children in the first stage of development learn by observation.

They are imitative. The impressions made during childhood are lasting, for nature intends the child to store up facts by which in after years his expressive, and still later his reflective, faculties may be developed. Childhood is, therefore, the time to make correct impressions, and the child who is so fortunate as to breathe the pure moral atmosphere of a good man or woman will be saved the pain of spiritual amputation in after years. Children are not able to appreciate moral lectures, indeed much harm is often done by those same moral lectures, so that the example of a teacher is of much more weight than anything he may say, and any act or word of his that awakens suspicion is extremely unfortunate. No child will respect or love a person whom he mistrusts, and the teacher who occupies this relation to a child can hope to accomplish little. Children are good critics. They detect better than grown people blemishes in character, and the remark, 'I do not like my teacher,' is often the result of a child's moral strength in detecting and condemning wrong.

"The character of teachers, therefore, should be a question of grave importance. Much attention has been given to intellectual attainments, and wisely too, but physical and moral qualifications have been largely overlooked. Thousands of persons are licensed to teach every year of whose character superintendents know absolutely nothing. We see the result of such carelessness in vicious and ill-mannered children.

"Is it profitable? Is it humane? Is it right?"

"To attain proper qualifications to teach is the work of study, experience and moral growth, but following are some hints teachers might find useful:

"Never be too busy to greet your children pleasantly.

"Don't be afraid of your dignity.

If a boy enjoys talking to you about base-ball, listen gracefully and tell him anything of interest you may know about the game ; it is your duty to be interested in what interests your children.

"Never be afraid children will know you too well. If you are what you should be, the more they learn about you the better they will love you.

"Don't see everything that occurs in the school-room ; you will be happier, and so will the school.

"Never use authority simply to test it. Its efficacy depends very much on the stage of the disease.

"Never punish because you *can* but because you *must*.

"Never consider anything troublesome that gives your pupils either pleasure or profit. Make each pupil a study, and do not try 'to use them all alike.' Did you ever hear of a

physician using the same remedy for all diseases ?

"Give a child time to *grow* into good habits, and do not be foolish enough to teach him deception by compelling him to do impossible things ; no one ever got his growth in one day.

"No child is thoroughly bad. The teacher who arrives at that conclusion is not a good judge of character.

"Don't think it a crime to laugh. "Don't mistrust your children ; lying and cheating are the results of poor management.

"Do not preach too much, especially to boys.

"Do not frighten children by severity, nor repel them by coldness. Take them into your heart of hearts, and watch them bud and blossom in the sunshine of love."—C. C. RAMONEL, *Exchange*.

CORRESPONDENCE.

To the Editor of THE MONTHLY :

SIR,—The discussion of the Upper Canada College question has revealed a change in public sentiment since it was before the country last ; there is unquestionably a growing sentiment in favour of its continuance. It has been proved, beyond doubt, I think, that the college endowment never formed part of the university endowment on the one hand, nor the grammar school fund on the other. The following are the facts :

"In 1797 an address was presented to George III. by both Houses of the Province of Upper Canada praying for a grant of land for educational purposes. In 1798 467,675 acres were appropriated for those purposes. Of this quantity of land 170,719 acres were alienated by grants to individuals. In lieu thereof 272,600 acres

were appropriated to a similar purpose, giving a surplus over and above the quantity deficient of 101,881 acres—and thus after deducting 19,282 acres—surveyors' percentage—the total educational endowment of the Province of Upper Canada was 549,217 acres. The appropriation was intended to be applied as follows : The design was that there should be a University and four Grammar Schools and that the portion of the University should be at least equal to that for the schools. Accordingly, King's College (now the University of Toronto) obtained in 1828 225,944 acres, or one-half of the whole endowment. Upper Canada College obtained as its one-quarter share of the other half of the endowment between 1830 and 1835 63,268 acres. The other three-quarters of that half were never made use of

for educational purposes, except in the way of sustaining what were then called common schools, now public schools. Thus the grant to Upper Canada College was entirely separate from that of the University of Toronto, and was never taken from it."

High School masters will not be benefited in any way by the abolition of the college; they may possibly be benefited by its continued existence. He is no friend of the teaching profession who will lend his hand toward the extinction of any institution of learning that is capable of doing good work. There is enough Philistinism abroad now without teachers giving it any encouragement. Besides, every High School master knows that even in his own town or city, where there is a good school, there are boys who would be better in a boarding school. The case of these residing in rural districts, many miles distant from a High School, is much stronger. Not one of the High Schools or Collegiate Institutes has developed into a boarding school in the true sense of the term; it costs too much to do this; and, besides, the co-partnership of school board and head master is necessary before such a thing can be effected. Is this possible? I think not. There is a very general consensus of opinion that the College should be confined to its own sphere of work; viz., a residential school for boys that cannot, for several reasons, be educated at home. If this be adhered to, it will fill a much needed place in our national system of education. The abolition of the college will be followed by a demand for exemptions from school taxes of those who do not benefit directly by the schools. There is a demand for residential schools, and it is no answer to this to say that the denominational boarding schools are open to the class that cannot educate their boys at home; the ma-

majority of people do not believe in denominational educational institutions of learning that are not directly answerable to the public for their efficient management. Give this agitation the semblance of success and it is hard to say where it will end.

HIGH SCHOOL MASTER.

25th March, 1887.

WOODSTOCK COLLEGIATE
INSTITUTE.

(BY SPECIAL CORRESPONDENT.)

THE presence of the Hon. G. W. Ross, Minister of Education, in the Woodstock Collegiate Institute, will, no doubt, form an important turning-point in the history of this Institution. The old Grammar School was founded in 1843, and we may, without contradiction, affirm that efficiency has marked its every stage, as hundreds of its pupils in almost every part of the civilized world will testify. The Hon. the Minister of Education was now present officially to raise it from the status of a High School to that of a Collegiate Institute. The Board of Trustees were in waiting, and conducted the hon. gentleman through the various classrooms, laboratory, etc., of the building, with all which he was highly gratified. The party then, about half-past two p.m., entered the large room, which was tastefully decorated for the occasion, and filled to overflowing with the pupils and many prominent citizens of the place, who all accorded a hearty greeting to Mr. Ross. Mr. Wm. Grey was chairman of the meeting, which was opened with an instrumental selection. Thereafter an address from the Board, read by Mr. Grey, was presented to the distinguished visitor, who replied in an address full of wise sayings and earnest words. He was, he said, a

believer in the influence exercised by the æsthetic in architecture over the minds of children. They had now a beautiful and commodious building. Nothing required by the departmental regulations was wanting, but he hoped the Board of Trustees would find it convenient to get a Music Master, and that the subject of drill would not be neglected.

This was number eighteen among the Collegiate Institutes of Ontario, and he hoped to live long enough to dedicate many more. The trustees had done their duty, but good trustees will not alone make a good school. The next important element is good pupils, and, while speaking to the pupils, he would advise them "to hasten slowly." The most dangerous tendency of the present day was that of being in a hurry, of being anxious to pass examinations too quickly, to have a short cut to everything. That was not the way in which we were going to lay the foundation of a solid education. The only way to build substantially is to proceed step by step, laying the foundation with great care. We must do our work thoroughly. He protested against the system of veneering in education. We are surrounded

with influences that stimulate us to work rapidly, and these influences we must resist. I hope, he said, that the pupils of the school will derive much comfort from their studies. If you have a classical department, which you have, so attend to these studies, that you will master these old models of pure expression, the highest types of language which we have. You have one of the oldest, most experienced and most successful classical masters in the Province (Mr. Strauchon) in charge of the department. Many are the pupils of his that have taken honors, and it is to be hoped that he will live to see many more do the same. Then there is the staff of teachers, and it is of the greatest importance that the teaching staff should be composed of the ablest men obtainable, for it is impossible to raise a school the fraction of an inch above the level of the master in charge. The present staff had entered upon their work under favourable circumstances, and he hoped Woodstock Collegiate Institute would be favoured with alumni of high attainments, who would look back on the time of their attendance here as the proudest period in their lives.

EDITORIAL NOTES.

THE education of a people is a very important part of that people's life. The process is carried on by various agencies — the family, the church, the Public and High Schools under Government inspection, day schools, residential schools. Schools exclusively for girls or for boys, or for both together; colleges and universities. All these various classes of schools exist among us, and all, we have no doubt, are doing good work for the community. The existence of

these schools is proof positive to us that the people want them and that the sovereign people will have them — *volens volens*.

That a day-school should say to a residential school, "I have no need of thee," always reminds us that "The eye cannot say unto the hand, I have no need of thee; nor again, the head to the feet, I have no need of you."

The discussion *re* Upper Canada College is a fair illustration of this

illiberal spirit condemned ages ago. Here we have citizens of this prosperous and growing province debating with the vim and ardour of Anglo-Saxons whether a fair residential school shall be continued or not. We have not heard one educator express an opinion on the question without confessing that such a school must exist, that very many people in our country must have such a school. To tell these people, who pay heavy rates for the maintenance, in efficiency, of the Public and High Schools, that if they need such a residential school they must support it from their own resources is insolently unjust. And it is only to add injury in several directions to injustice to apply this mode of reasoning to a

school which has done good work for nearly sixty years, and continues to do it. Both classes of schools are required by the country, and although objection has been taken to these residential schools because they are not under a Government inspection, enlightened educators know far too much about the evils of the "machine system" to consider this a valid objection. We strongly recommend the Legislative Assembly now in session to follow up vigorously the wise policy of their predecessors in 1797 and 1798, and establish three other well-equipped residential schools (one of them at least for girls), and we do hope that we shall hear no more of the dangerous proposal to quench a light, clear and increasing.

SCHOOL WORK.

MATHEMATICS.

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

UNIVERSITY OF LONDON.

MATRICULATION EXAMINATIONS,
JANUARY, 1887.

ARITHMETIC AND ALGEBRA.

Examiners—Prof. A. G. Greenhill, M.A.,
and Prof. M. J. M. Hill, M.A.

1. Simplify

$$\left(\frac{2}{3} - \frac{2}{11} + \frac{16}{21} \right) \div \left(2 + \frac{1}{2 + \frac{1}{2}} \right)$$

$$\left(\frac{3}{77} + \frac{2}{33} - \frac{1}{21} \right) \times \left(3 - \frac{1}{3 - \frac{1}{2}} \right)$$

2. Find the square root of '121 to five places of decimals.

3. Calculate the value of

$$\sqrt{(\cdot\dot{7}\dot{8}) \times (\cdot\dot{0}\dot{0}\dot{0}\dot{4})}$$

$$(\cdot\dot{0}\dot{1}\dot{3}) \times (\cdot\dot{0}\dot{1}\dot{5})$$

4. Prove the identity

$$\frac{1}{b} \left(\frac{1}{x^2 - bx + a^2} - \frac{1}{x^2 + bx + a^2} \right)$$

$$+ \frac{1}{c} \left(\frac{1}{x^2 + cx + a^2} - \frac{1}{x^2 - cx + a^2} \right)$$

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

5. Express in factors of the first degree the L. C. M. of the two algebraical expressions

$$6x^2 - 7x^2 - 11x + 12,$$

$$\text{and } 12x^2 - 56x^2 - 45x^2 + 113x + 60.$$

6. If $x=1$, find the values of y and z which satisfy at the same time each of the three equations—

$$3x - 2y - 2z = 1,$$

$$5x - 8y - 5z = 6,$$

$$-4x - 2y + z = 3.$$

If $x=0$, what values of y and z will satisfy at the same time the same three equations?

7. A person has a certain amount of 4 per cent. stock. He sells it at 117½, and invests half the proceeds in 2 per cent. stock at 96, and the rest in 3 per cent. stock at 99. He then finds that his annual income is reduced by £20. What amount of the original stock had he?

8. On incomes of less than £150 no income tax is levied; on incomes between £150 and £400 the tax is levied on the amount of the income less £120; on incomes over £400, the tax is levied on the full amount of the income. Find the respective incomes of a man and his wife when the revenue obtains twice as much by treating the two incomes as one as it would if it treated them separately, it being known that the man's income is three times that of his wife, that the wife's income is less than £150, that of the man between £150 and £400, and that the two incomes together exceed £400.

9. The sum of the 5th and 15th terms of an arithmetical progression is equal to the sum of the first and last terms. How many terms are there in the progression?

If, further, it be known that the first term is zero, and the middle term 16, what is the sum of this progression?

10. If s be the sum of the geometric progression $\frac{3}{10} + \frac{3}{10^2} + \frac{3}{10^3} + \dots + \frac{3}{10^n}$ show that

$$\frac{3}{10^n + 2} \left(s + 1 + \frac{2}{10^n + 1} + \frac{6}{10^n + 3} \right) = \frac{4}{10^n + 2} - \frac{2}{10^{2n} + 2} - \frac{1}{10^{2n} + 4}$$

LATIN GRAMMAR AND COMPOSITION.

Examiners—Prof. R. Y. Tyrell, D. Lit., Ll.D., M.A., and Prof. A. S. Wilkins, Litt. D., Ll.D., M.A.

1. Decline together in the singular *vilior supellex* and *furvens iecur*, and in both singular and plural *ater cinis*.

2. Give the first person singular of the present and perfect indicative active, and the present infinitive active, of the verbs from which come *fictus*, *fixus*, *fultus*, *laccisius*, *oblitus*, *refertus*, *tritius*, *vinctus*.

3. Distinguish between *arā* and *arū*, *libet* and *libet*, *mālus* and *mālus*, *patēre* and *patēre*, *ūti* and *ūti*, *vīlitum* and *vīlitum*.

Write down the adjectival superlative forms corresponding to *citra*, *extra*, *infra*, *intra*, *prope*.

5. Give the perfect indicative active (1st person) and the supine of *auferre*, *emere*, *fodere*, *lavare*, *repellere*, *reperire*, *secare*, *texere*.

6. Express in Latin, by the use of the impersonal verb.

(a) We have come to the temple of Vesta.

(b) Both sides fought bravely.

(c) The Carthaginians firmly resist the Romans.

(d) Claudius went to meet Hasdrubal.

7. Translate the following quotations, making any observations which may occur to you on the meaning or construction.

(a) Surgit amari aliquid.

(b) Volito vivus per ora virum.

(c) Varium et mutabile semper.

Femina.

(d) Laudator temporis acti.

Se puero.

8. Explain and illustrate the uses of the conjunction *cum* with indicative and with the subjunctive.

9. Translate into Latin prose (five only are to be tried):

(a) Caesar, having gained this information (*use ablative absolute*), advanced by forced marches on Marseilles.

(b) Observe, fellow-citizens, that not only your revenues, but your lives are at stake.

(c) He rode for a day and a night without ever dismounting.

(d) This path to fame has always been open to all the best men.

(e) 'Tis not in mortals to command success; But we'll do more, Sempronius, we'll deserve it.

(f) I asked him what o'clock it was, but he gave me no answer.

(g) He asked if I had read the argument of Socrates for the immortality of the soul.

(h) How happens it that no one is contented with that lot which his own choice has assigned to him or chance has thrown in his way?

To help the young soul, add energy, inspire hope, and blow the coals into a useful flame; to redeem defeat by new thought, by firm action, that is not easy,—that is the work of divine men.—R. W. Emerson.

CLASSICS.

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

BRADLEY'S ARNOLD.

BY M. A.

Exercise 32 A.

1. Pollicetur se civibus tuis auxilio brevi venturum esse. 2. Tum sicario cruentum pugionem e manibus extorsit. 3. Vereor ut hæc tibi honori sint futura. 4. Quid sibi isti velint parum intellego. 5. Tanto proelio interfuisse summo tibi est honori. 6. Dubitari non potest quin ejusmodi superstitio homini sit opprobrio. 7. Vereor ne hoc eis qui reipublicæ præsent et detrimento sit (futurum 138, 139) et dedicori. 8. Cassius illum rogabat, cui res bono fuerit. 9. Rempublicam quaestui habere turpissimum est. 10. Quærere velim quem locum domicilio elegeris (164). 11. Vereor ne hoc tibi magno sit et dolori et opprobrio. 12. Puerum monebo quanto sit opprobrio fidem fallere. 13. Pollicitus est se Cyprum eis insulam dono daturum esse. 14. Spero eum intellecturum esse quanto omnibus sit odio crudelitas. 15. Tum Cæsari ad pedes legati Gallorum se projecere. 16. Videtur et odisse populum nostrum et nobis odio esse. 17. Spero me tibi auxilio cum duabus legionibus brevi venturum esse.

Exercise 48 B.

1. Poetam quem singuli negleximus (or neglebamus, the habit) universi laudamus. 2. Stat a nobis optimus quisque ac sapientissimus (or stant . . . omnes boni ac sapientes), et quos diligimus admiramurque eos eadem quæ nos sentire cupimus. 3. Ut quisque plurimum civitati prodest, ita apud cives maximi fit; miles hic fortissimus, reipublicæ fuit idem gubernandæ peritissimus; utramque igitur ob causam summa laude et honore florebat. 4. Persæpe fit ut quanto quisque stultior est ac rerum imperitor tanto sit loquacior pertinaciorque. 5. Tritum illud levissimum quemque aliud alio tempore (or alias) appetere. 6. Jam satis apparebat (46 C) hostes primo quoque tempore castra nostra aggressuros fore, eosdem occa-

sionem idoneam expectaturos. 7. Qui universis nobis salutem attulit, cum singuli descriamus destitutumque. 8. Persuasum sibi habere credo optimum quemque, nullo modo fieri posse ut cunctando differendo que quidquam efficiamus; ut procerto sciam properato potius quam consulto opus esse. 9. Ægre illud civibus persuasit hostes nihil fere singulos posse, conjunctos plurimum. 10. Tum cuncti, pro se quisque interroganti responderunt; hoc facto plerique senatum orare, universos singulosque obtestati, ut consules primo quoque tempore alter ambove sibi succurrerent.

SCIENCE.

IN California, if anywhere, forestry should claim proper attention from the state; and, apparently on the principle of better late than never, the first biennial report of the State board of forestry is now issued. A region like middle and southern California, on the borderland between sufficient and insufficient rainfall, where irrigation is essential to agriculture, must care for its streams, and must therefore care for the forests where they rise. By this it is not intended to assert that forests exercise any control over the amount of rainfall, and it is a satisfaction to see that this popular fallacy receives no very direct support in the report under consideration: but as regulators of discharge by streams, the importance of the relation between forests and rainfall cannot be questioned; and in a state like California, where the forests are peculiarly limited to the higher, rough, non-arable lands, whence the streams flow down to the farms below, the preservation of a fair share of the trees is a prime necessity. In the southern part of the state the balance of conditions is so delicate, that the forests merely survive, but have no recuperative power. If destroyed, they do not spring up again, but leave the surface barren. It is in such districts that much damage has already been done, not only in defacing the hill country, but in increasing the irregularity of stream-flow. The rain

runs off from a bare hillside in a violent flood, carrying soil and gravel with it, and leaving no store of moisture in the ground to supply springs in the dry season. The forestry board and the school of forestry, inaugurated at Los Angeles in the University of southern California, have therefore a large work before them, that must become of much value to the state.—*Science*.

THE character of the Friday-evening lectures at the Royal Institution (the scene of the labours of Davy and Faraday) is probably well known to most readers of *Science*. The after-Christmas series was opened by Sir William Thomson, who discoursed to a brilliant audience upon the probable origin, extent and duration of the sun's heat. Adopting, apparently unreservedly, Helmholtz's theory of its origin being due to the shrinkage of its mass, owing to gravitation, he pointed out that gravity was $27\frac{1}{2}$ times as great at the sun (at present) as at the earth, and how different, therefore, solar physics were from terrestrial. The mystery of the relation between gravitation and the other properties of matter had hitherto proved insoluble. A body falling through only forty-five kilometres on to the sun's surface, would develop more energy than any known chemical combinations, and hence he relegated such combinations to the domain of the determining influences of merely incidental changes. Much time was devoted to calculations of solar energy from the point of view of the "mechanical equivalent of heat." The amount of solar shrinkage was probably about 0.01 per cent. of his diameter in 2,000 years. Fifteen million years ago the sun was probably four times its present diameter, and in another twenty million, its density will equal that of lead, and the activity of solar radiation will probably greatly diminish. At present it was about 75,000 horse-power per square metre. Looking back, although biology demanded more time, the study of dead matter would give twenty million years as a maximum past limit, and ten million years as a maximum future limit, of the heat received at

present by the earth from the sun. The speaker created some amusement, towards the end of his discourse, by admitting that "However, after all, we know nothing whatever about it!"—*Science*.

CLASS-ROOM.

L. B. DAVIDSON, Head Master Public School,
Sault Ste. Marie, Editor.

ARITHMETICAL PROBLEMS.

FOR MONTHLY.

1. The product of two numbers when multiplied by 3 is '0005; one of them is '005; find the other. *Ans.* '3.

2. On one side of a street $5\frac{1}{2}$ miles long are planted chestnut trees, 24 feet apart, and on the opposite side are planted maples, 21 feet apart. Telegraph poles 56 yards apart, and lamp posts 144 yards apart are placed along the same street. How often will the trees and the posts be exactly opposite one another? *Ans.* 11.

3. A can do a work in 8 days when B helps him 4 days; B can do it in 16 days when A helps him 2 days. In what time can A and B working together do a piece of work three times as great as the former? *Ans.* 20 days.

4. A tree, 150 feet high, in falling broke into three pieces; $\frac{2}{3}$ of the first piece was equal in length to $\frac{1}{2}$ of the second piece, and $\frac{1}{2}$ of the second piece was equal to $\frac{1}{3}$ of the third piece. Find the difference in length between the first and the third pieces. *Ans.* 18 ft.

5. In a cask the wine is to the water as 3 to 1. When 10 gallons more water are added the wine forms $\frac{2}{3}$ of the mixture. How many gallons of wine are there? *Ans.* 30.

6. An estate agent bought two lots, the first cost $\frac{2}{3}$ of the second. In selling them he gained $\frac{1}{2}$ on the first, and lost $\frac{1}{2}$ on the second. His net gain was \$10. Find (a) the cost of each lot; (b) his gain per cent.

Ans. (a) \$1,000, \$1,200; (b) $\frac{1}{11}$ per cent

7. A man bought from a merchant what he supposed was \$2.50 worth of tea, but by the use of false scales he was cheated 15½ cents. Find the true weight of the merchant's "pound" weight. *Ans.* 15 oz.

8. A merchant bought a bankrupt stock at 62½ cents on \$1. On half the stock he realized 10 per cent. less than the original price, and on the remainder he realized 40 per cent. less. Find his gain per cent. *Ans.* 80 per cent.

9. How many lots, each containing ¾ of an acre, can be made from a piece of property 44 chains square? *Ans.* 11.

10. A man has a square field containing 2½ acres. How many furrows, each 9 in. wide, must he plough across it to turn up an acre? *Ans.* 176.

EDUCATION DEPARTMENT ONTARIO.

GOMA AND PARRY SOUND TEACHERS'
EXAMINATION, JULY, 1886.

ARITHMETIC.

Time—Two hours and a half.

1. Define factor, highest common factor, least common multiple, per cent., discount, decimal, decimal fraction. [7.]

2. Simplify :

$$(a) \frac{10\frac{3}{4} - 7\frac{1}{2}}{12\frac{3}{4} - 9\frac{1}{2}} - \frac{8\frac{3}{4}}{19\frac{1}{2}} \times \frac{12\frac{1}{2}}{16\frac{1}{2}} \div 3\frac{1}{2} + 18\frac{1}{2}. \quad [15.]$$

$$(b) 7\frac{1}{2} - 8\frac{3}{4} - 12\frac{3}{4} + 7\frac{1}{2} - (5\frac{1}{4} - 6\frac{3}{4} - 7\frac{1}{2} + 10\frac{1}{2}) + 15\frac{1}{2}. \quad [15.]$$

3. A merchant bought a quantity of cloth at 3 yards for 1 shilling, and ⅓ as much at 5 yards for 2 shillings; and sold the whole at 15 yards for 7 shillings. How many yards at this rate must he sell to clear \$1.12? (20 cents to the shilling). [15.]

4. A and B can do a piece of work in 20 days; B and C can do the same work in 25 days, and A and C in 30 days. If A and B work 5 days, and C 20 days, how long will it take B to finish it? [14.]

5. A speculator loses ¼ of his money and then gains \$14; he then loses ½ of what he

now has, and gains \$8, when he retires as he began. What amount had he at first? [12.]

6. A merchant has teas worth 30, 40, 80 and 83½ cents per lb. respectively; he wishes to make a mixture amounting to 80 lbs. so as to sell at 70 cents per lb., and gain 20 per cent. on the whole. How much of each kind must he use? [15.]

7. A broker invested a certain sum of money in railway stock at 88 and paying 6 per cent. dividend, and four times as much bank stock at 80, and paying 5 per cent. dividend; his income from both investments was \$1,400. How much did he invest in each kind of stock? [15.]

8. The amount of two notes is \$400; they are drawn for one year; the one is discounted at a bank, and the other at true discount. The sum of both discounts is \$38. Money being worth 10 per cent. what is the face of the note discounted at bank discount? [15.]

9. How far may a boat, whose velocity is 8 miles an hour in still water, go up a stream whose rate is 4 miles an hour, so that the round trip (going and returning) may take only eight hours? [12.]

10. Two vessels, one in the form of a cube, and the other in the form of a cylinder, together hold 71½ gallons of water. The diameter of the cylinder is 16 inches, and the depth of side 30 inches. If a gallon of water weighs 10 lbs., and a cubic foot 1,000 ounces, find the dimensions of the cube. [15.]

PRIMARY SCHOOLS (PHILADELPHIA).

TERM EXAMINATION, JUNE 16, 1886.

SEVENTH GRADE—DRAWING.

1. Draw two horizontal parallel lines entirely across the paper, and five inches apart. From the lower to the upper draw eight oblique parallel lines one-half inch apart. (Credits 0 to 15.)

This is to be done by the class simultaneously; the teacher counting one, two, three, four, five, etc., for the lines in succession with a sufficient pause between. But one trial to be allowed, and no erasures.

2 Dictation—(a) Draw a circle whose diameter shall be three inches. (b) Draw its vertical and horizontal diameters. (c) Join the ends of the diameters by curves bending inward. (d) In the centre of the circle draw a square, side one inch. (Credits 0 to 25,—a, 10; b, c, d, each 5.)

This exercise is to be drawn entirely free-hand. No measurements are to be allowed. The dictation is not to be written on the board. The pupils will draw the figure but once.

Give one step at a time, and wait a reasonable time before proceeding with the next.

3. Place the cone and the triangular prism, with its flat side toward the pupils, in an upright position, one inch apart. The pupils will draw an outline representation of these solids, actual size. Use the large solids. (Credits 0 to 25.)

This exercise is to be drawn entirely free-hand, and measurements are not to be allowed. The dimensions are not to be mentioned or suggested in any way.

4. Place a tumbler before the class, lying on its side, and require the pupils to draw an outline of it in this position, actual size. (Credits 0 to 15.)

This exercise is to be drawn entirely free-hand, and no measurements are to be allowed.

5. In a circle whose diameter is four inches, make an arrangement of straight and curved lines to form a simple design. (Credits 0 to 20.)

The circle may be drawn with instruments. The curves and the straight lines forming the design must be drawn entirely free-hand.

EIGHTH GRADE—DRAWING.

1. Draw two horizontal parallel lines entirely across the paper, four inches apart. From the upper to the lower draw eight parallel curves. (Credits 0 to 15.)

This is to be done by the class simultaneously; the teacher counting one, two, three, four, five, etc., for the lines in succession with a sufficient pause between. But one trial to be allowed and no erasures.

2. Dictation—(a) Draw a circle 4 inches

in diameter. (b) Draw its vertical and horizontal diameters. (c) Join the ends of the diameters by curves bending inward. (d) In the centre of the figure draw a circle one inch in diameter. (Credits 0 to 25,—a, 10; b, c, d, each 5.)

This exercise is to be drawn entirely free-hand, and no measurements are to be allowed. The dictation is not to be written on the board, and the pupils are to draw the figure but once.

Give one step at a time, and wait a reasonable time before proceeding with the next.

3. Place the cone and the triangular prism in an upright position, one inch apart; the prism, with flat side toward the pupils. The pupils will draw an outline of these solids as they stand, actual size. Use large solids. (Credits 0 to 25.)

This exercise is to be drawn entirely free-hand, and measurements are not to be allowed. The dimensions of the solids are not to be mentioned or suggested in any way.

4. Place before the class a pair of scissors partly open, with points downward. Require pupils to draw an outline of them, actual size. (Credits 0 to 15.)

This exercise is to be drawn entirely free-hand, and measurements are not to be allowed.

5. In a square whose side is four inches, draw a design composed of the following unit: (Credits 0 to 20.)

The construction lines may be drawn with instruments. The design must be drawn entirely free-hand. Tracing is not to be allowed.

EXAMINATION QUESTIONS, SAN ANTONIO PUBLIC SCHOOLS.

Examination of Teachers, August 16-21, 1886.

ENGLISH GRAMMAR.

1. How are sentences classified with respect to use?

2. How are sentences classified with respect to form?

3. (a) Decline the pronoun *I*, (b) the pronoun *thou*.

4. But war's a game which, were their subjects wise, kings would not play at. (a) Parse war's, which, were. (b) What kind of a sentence in form? (c) What is the subject?

5. Write a synopsis of the verb *go*, indicative mood, first person, singular number, in all the tenses.

6. Define (a) grammar, (b) mood, (c) tense, (d) person, (e) number.

7. Make sentences containing the relative pronouns *as*, *that*, *who*, *which* and *what*.

8. Write a sentence having two verbs in different moods and in different voices.

9. What is the difference between model adverbs of manner?

10. Copy the following, punctuating properly, and using capitals where required. Your penmanship will be graded on this:

What tubero did that naked sword of yours mean i n the battle of pharsalia at whose breast was its point aimed what was then the meaning of your arms your spirit your eyes your hands your ardor of soul what did you desire what wish for i press the the youth too much he seems disturbed let me return to myself i too bore arms on the same side.

ARITHMETIC.

1. Find the greatest number that will divide 748 and 927, and give the remainders 13 and 17 respectively.

$$2. \frac{11x^2 - x^2}{3\frac{1}{2} + 5\frac{2}{3}} \quad \text{Simplify.}$$

3. A. and B. contract to do a job of work. A. does 7-15 and B. 8-15 and B. receives \$25 more than A. How much did each receive?

4. A. and B. located at different points to observe the beginning an eclipse of the moon. By A.'s time the eclipse begins at 10 p.m., and by B.'s at 12 hrs. 15 m. a.m. What is their difference of longitude, and which is west of the other?

5. Find the cost of 40 boards 14 ft. long, 9 in. wide and 3 in. thick, at \$2.75 per C.

6. Sold flour so as to gain 2-5 as much as it cost. What per cent. was gained?

7. A man paid \$175 for insuring his dwelling, at 7-8 per cent., and \$100 for insuring the furniture, 1 1-4 per cent. If both are destroyed by fire how muc' is he entitled to receive?

8. A. engaged in business with a capital of \$5,000; 3 mos. afterwards he took in B., with a capital of \$6,000; and 4 mos. later he took in C. with \$10,000. At the end of the year their profits were \$10,000. What is the share of each?

9. How much more will it cost to enclose with a fence. 160 acres of land at \$4½ a rod, if in the form of a rectangle 320 rd. long and 80 rd. wide, than if in a square form?

10. A cubical box contains 9,261 cubic inches. How many square inches in one of its faces?

GENERAL HISTORY.

1. To which of the three branches of the Caucasian race do the following belong:—Chaldeans, Phœnicians, English, Persians, Assyrians.

2. What were the Punic Wars? (b) Name two great leaders in those wars.

3. By what armies was the Battle of Marathon fought? Which army was victorious?

4. Name the three great tragic poets of Greece.

5. What four conquests of England have been made?

6. (a) What were the *Wars of the Roses*? (b) Why so called? What battle decided the contest?

7. What was the cause of the Crimean War? (b) How did it result?

8. What caused the *War of the Austrian Succession*? (b) What was the result?

9. What were the chief causes of the French Revolution of 1789?

10. By what armies was the battle of Waterloo fought? Who were the commanders? Which side was victorious?

CONTEMPORARY LITERATURE.

"EDUCATION" for March contains a useful article on "English Grammar, viewed from all sides," by Prof. Edward A. Allen.

THE March *Atlantic* is a readable number. Perhaps most of us will enjoy Dr. Holmes' "Hundred Days" more than anything else.

THE *School Newspaper* provides pleasant accounts of what goes on in all parts of the world. The selections are varied and judicious.

A RECENT number of the *Overland* contained an interesting article on the Training School for Nurses in San Francisco. The March issue is rich in the local sketches for which this magazine is noted.

THE work of our valued exchange, the *Sunday School Times*, grows more important and useful year by year. Able scholars and teachers contribute to its columns, and the thoughts on the editorial page are fresh and helpful.

THERE is no better magazine for Sunday and general reading than the *Quiver*. Among the contributors to the April number may be mentioned the Dean of Armagh, the Rev. Prof. W. G. Blaikie and the Hon. Catharine Scott. The serials are much above the average of magazine stories.

THE death of Prof. E. L. Youmans, the founder, and till his death, the senior editor of the *Popular Science Monthly*, has taken from the ranks of living scientists a devoted and unselfish worker in the cause of science. His brother, Mr. W. J. Youmans, succeeds him in the editorship of the *Popular Science Monthly*.

THE current *Eclectic* is full of good reading. There are few intelligent people who will not find here something from which to profit. "Locksley Hall and the Jubilee," by Mr. Gladstone; "A Thought-Reader's Experience," by Mr. Stuart Cumberland;

"Paganism in England," from the *Gentleman's Magazine*, may be mentioned among other articles.

ON TEACHING ENGLISH. With detailed examples, and an inquiry into the definition of poetry. 2s. 6d.

ENGLISH COMPOSITION AND RHETORIC.—Enlarged edition. Part I: Intellectual elements of style. By Alexander Bain, LL.D., London: Longmans, Green & Co. 3s. 6d.

In remodelling his work on English Composition and Rhetoric, Dr. Bain has divided it into two parts, and issued a companion volume, "On Teaching English." These books are of great value, and should be diligently studied by all teachers who may be fortunate enough to have access to them. Fully illustrated by examples, and dealing with the very subjects on which the enthusiastic teacher of English needs light, we heartily commend them to the profession.

THE USE OF MODELS. A teacher's assistant in the use of the Prang Models for form study and drawing in Primary Schools. Boston: The Prang Educational Co.

ESSENTIALS OF ENGLISH GRAMMAR. By Prof. W. D. Whitney, of Yale College. Boston: Ginn & Co.

Teachers will find in this little book many suggestions for the better teaching of English Grammar. Every point is amply illustrated by good examples. The work will repay careful reading.

A SERIES of outline maps, intended for the use of Geography and History classes, is now being published by Messrs. D. C. Heath & Co. of Boston. We think that in the hands of a judicious teacher these maps would be of great use. Price \$1.50 per hundred. Samples free.

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