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THE CANADA EDUCATIONAL MONTHLY.

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THE CANADA

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JANUARY, 1886.

EDUCATION OF TEACHERS.

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

THE position was taken, in what was said in the two former articles, bearing upon the question, "What is the teacher's work?" that the acquisition of knowledge ranks in, the development of a symmetrical manhood, lower in importance than the acquisition of power, habits and tastes. However true this position may be in principle, the truth of its opposite is assumed almost universally in the practical working of our schools from the universities down to the primary grades. The limits of the present article will not permit of citing facts and cases to verify this statement; but facts and cases without number can be cited. Any careful observer of the work done in our schools, and of the tests applied to see that the work has been performed, cannot fail to notice that the acquisition of knowledge occupies, almost exclusively, the attention of both teachers and pupils. Were this not so the ability to "cram" could not be, as it actually is, one of the chief qualifications necessary to secure promotion and honour in many

institutions of learning. Who does not know that the ability to pass examinations for promotion and *honour* does not depend upon the fine character the pupil has been forming under the guidance of a true teacher; does not depend upon the success of the teacher in developing symmetrically physical, intellectual, moral and spiritual power in the pupil; does not depend upon the acquisition upon the part of the pupil of habits and tastes by which both power and knowledge can be rightly utilized, can be made to serve the highest good of the pupil and of humanity? No, these are not the qualifications upon which high honors in passing examinations depend. Not unfrequently the highest honors go to some member of a class lacking in almost all of these. This state of things should not be, yet it is, and will continue to be as long as a premium is put in our systems of education, as at present, upon acquiring simply a knowledge of what some one else has said and done, gathered either from books or from

mere formal lectures by the living teacher. So long as a knowledge of this sort, not the power to acquire, to investigate, to understand, to interpret, to illustrate truth, not the power to vitalize others and cause them also in turn to do the same kind of work, not the habits and tastes that should be possessed by an effective teacher, by a leader and manager of others, is made largely, if not entirely, the legal condition of admission to the teachers' profession; so long as this state of things exists, so long must our system of educating teachers be, necessarily, one-sided and very defective.

In the views just stated, while holding that the acquisition of knowledge is given too much prominence in systems of education, it is not intended to maintain that this acquisition is not a very important educational factor. It is important; but its importance does not depend so much upon the knowledge acquired as upon the mental discipline necessarily involved in the act of acquiring. Hence the knowledge to be acquired, however important, should never be made the chief end, as it is in many cases, of the teacher's effort. But to be more explicit, let us note just what is meant by knowledge in the language of the schools. Does it mean an actual consciousness of existing entities, of existing relations, of existing phenomena; does it mean real, personal experiences of what is, whether in the form of entities, relations or phenomena? Or does it not rather mean, chiefly, if not altogether, the consciousness simply of the symbolism without any consciousness of the reality which the symbolism, whether composed of words, characters, signs, or diagrams, is intended to bring before the mind? We are strongly of opinion that this latter meaning is the one which applies to much of the knowledge acquired in our schools. A careful examination

of the facts warrants this opinion. Can any other meaning, for example, be attached to the word knowledge, when applied to the acquisitions of a student in trigonometry, who passes successfully his examinations by fixing in the memory in the course of three or four days a few demonstrations and important formulas without attempting to gain any clear perception of the quantities and relations expressed in these demonstrations and formulas? Such an example in this age of cramming is not peculiarly exceptional. Neither is this course confined to the mathematics. The sciences, philosophy and languages share the same fate. In these subjects, too, the possession of such knowledge as may serve to pass examinations with high honors does not always mean that the realities of which the subjects treat have been clearly construed in the consciousness. No, far from this. A knowledge which means a vivid and well-defined consciousness of the realities themselves is not required to pass examinations. All that is required, in many apparently very formidable examinations, is to have fixed in the memory what some text-book or lecturer has said *about* these realities. Questions pertaining to the most profound problems in science, philosophy and language are thus answered, while the realities which enter into and constitute the very essence of these problems have scarcely come, in any form, within the sphere of the consciousness of the person giving the answer. Instances verifying this statement are familiar to all who have had experience in conducting examinations, and particularly the examination of persons who have prepared their work without the help of an experienced teacher, whose questions, tests and probings make it impossible to fix in the memory the statements of others, without entering fully into the experi-

ences which these statements represent.

Again, we ask, should not knowledge mean an actual consciousness of existing entities, of existing relations, of existing phenomena? Should it not mean a real personal experience of what is, whether in the form of entities, relations, or phenomena? We think it should mean, at least, this. But thinking so suggests several questions that affect vitally the teacher's work and the preparation necessary to perform that work. Let us note some of these questions: And, first, can the teacher communicate, impart, or transfer his own knowledge to his pupils? Using the words communicate, impart and transfer in their ordinary sense we must answer no, to this question. This may appear to some to contradict the clearest experience of the teacher. Nevertheless the answer is correct. Knowledge involves three things: a *being* who knows, an *object* known and a consciousness of a determinate relation between the being and the object. This relation constitutes knowledge. To put any one, therefore, in the possession of new knowledge means to place the mind in such connection with the object to be known as will produce a consciousness of a determinate relation between the mind and the object. This is what the teacher must do; but this does not mean to communicate, to impart, or to transfer his own knowledge to his pupils. It means rather that the teacher must aid or guide the pupil in getting his mind into such relation to the things to be known as will necessarily give him real and true experiences or consciousnesses of these things. Just here other important questions arise: How can the teacher do this work? Can it be done by the use of words, however skilfully handled? Is it the office of words to put the mind in possession

of new experiences, of new consciousnesses; in short, of new knowledge?

The answer to the first and second of these questions depends upon the answer to the third. And to this we must answer yes and no. Yes, it is the office of words to put the mind in possession of new knowledge, if by *new* knowledge is meant only such knowledge as necessarily grows out of *new combinations* of the objects, entities or realities of which the mind has already a clear consciousness. But we must answer emphatically no, if by *new* knowledge is meant knowledge which necessarily grows out of objects, entities, or realities which have never been present to the consciousness. The correctness of this answer is evident from the very meaning and office of words. Words, whether spoken or written, are only signs or symbols which serve to recall into consciousness a certain number of ideas, objective realities or experiences, which, by common consent, have been associated with them. The full meaning of a word consists of the aggregate of these ideas, objective realities, or experiences, which it serves, through the law of association, to recall. A word, therefore, when used can bring before the mind only what has been there before, and what, when there, was consciously associated with the spoken or written symbol. Incorrect views, or perhaps the absence of any view of the true nature of the meaning and office of words, prove the source of a large amount of wasted effort upon the part of teachers, and make much of the so-called *new* knowledge of the school room, a mere sham and deception. The meaning of a word, for example, is supposed to be acquired when two or more words, called a definition, are associated with it, so that they are recalled when ever the word with which they are thus associated is present to the mind. This is regarded as acquiring *new* know-

ledge. And so it is, if by new knowledge is meant simply a consciousness of *new* but meaningless symbols. But surely this is not the new knowledge that the pupils should gain when acquiring the definition of words. No, it is not. Yet it is not too much to say that such is the new knowledge actually gained in very many cases.

This result grows out of the fact that the words called the definition may be, and indeed are, frequently associated in the minds of the pupils, with the word they are said to define as mere sounds or written characters. When words, therefore, are thus associated and given as a definition, there is nothing present in the consciousness but the words themselves, and there is no new knowledge gained except the knowledge of new sounds, and new combinations of known characters. This is not an unusual product of the school-room. Meaningless words are frequently associated in the minds of the pupils, so that they readily recall each other. A display of superior knowledge is thus made possible where there is practically none. To the uninitiated it would seem that the pupil is verily master of his subject, while he is almost entirely ignorant of the realities which his words should call into his consciousness. A little questioning, a little probing, a little searching upon the part of the teacher for these realities, soon discovers the fact that the words are used without much meaning. They may, indeed, be used just as the teacher has used them, or as they are used in the text-book in the pupil's hands, yet it does not follow that they convey any reality into the pupil's consciousness. No, to do this,

the meaning of the words must be acquired through a process consisting of several steps. First, there must be wrought into the pupil's mind a vivid perception or consciousness of the existence of a definite entity or entities; second, this perception must be idealized by the pupil, or made and retained as an object of thought; and third, when these two steps have been taken, this object of thought must be associated in the pupil's mind with the word in its oral and written form, so that whenever the word is present to the sense, the object of thought with which it has been associated is at once placed clearly in consciousness. Accepting this view of acquiring the meaning of words as substantially correct, it is evident that however skilful the teacher may be in the use of words, he cannot by this means alone put his pupils in possession of any knowledge which is not in some sense a combination of knowledge already acquired.

It may be objected to the foregoing that what has been said applies exclusively to the first stages of the pupil's work. This objection is not founded on fact, as we will endeavour to show in a future article. But for the present, accepting the correctness of the position, with reference to the first stages of the pupil's progress, it is plain that the teacher's work includes much more than can be done by talking or lecturing to his pupils, or by insisting upon the most diligent use, upon the part of the pupil, of the most approved text-books. It is also equally plain that the teacher's preparation for his work means much more than passing examinations upon books and lectures by living teachers.

THE TEACHER AS AN EXECUTIVE OFFICER*.

BY J. A. WISMER, PRINCIPAL MODEL SCHOOL, PARKDALE.

ON account of its importance we will, if you please, occupy a short time in the consideration of the teacher as a ruler and administrator, rather than as an instructor. In the first place we should remember that the school law of this Province recognizes the teacher as a public officer under its protection, and no one, be he parent or trustee, has the right to interfere with him while discharging his duties in the school room. According to law also the teacher must maintain proper discipline, and control his school. The teacher ought to know his business thoroughly before taking charge of a school, and then have "gumption" enough to do his duty at all hazards. He ought also to possess sufficient independence of character to maintain and defend his rights against any and every one. Do not allow *any one* to use language in the school room before your pupils, which would be calculated to lower the respect which you must have paid to you by them. If an indignant parent or trustee has anything offensive to say to you, give him to understand at once that it must be said outside the school room. Should he persist, order him out, and if he still persist, dismiss the school and summon him before the magistrate for interrupting and interfering with you, in the discharge of your official duties, for which, on conviction, he may be fined \$20 and costs, according to the school law. Should he use offensive and abusive language, *that* will only make your case the stronger. Be careful to keep your own temper under control; keep as cool and

steady as a veteran soldier under fire, and you are sure to be sustained, not by public opinion only, but by the law also. You may think this is an extreme case, but it may occur nevertheless during the first month of your engagement, and it is as well, therefore, to be prepared. It need not be said that he who can teach, but cannot govern, works at an enormous disadvantage. No teacher can manage a school successfully, without possessing in some very considerable degree the faculty of government. He must first be able to govern himself, before he ought to assume the government of others. The habit of subjugating one's own impulses, of constantly recognizing the supremacy of law and bringing our actions into harmony with it, is one of the first conditions of an orderly and well-disciplined life. It is the duty of the public school to teach a child obedience, self-government, rather than to give him simply a technical education. Your first duty then, after seeing that your school is properly classified and organized, will be to gain complete control over your class. In attaining this end you will need self-possession, decision of character, firmness of manner, will-power, knowledge of human nature, tact and sound judgment. With these you may secure perfect obedience by your own personal influence; without them you may need the help of force. Control *must* be had by some means or other, and it is better to gain it by force than not at all. Without good government the school becomes a place of torment to all concerned, and the teacher who fails utterly in securing it, after due trial, had better, like the Arab—"fold up his tent and si-

*A few closing words to the teachers in training at the Parkdale Model School, 1885.

lently steal away." You must have confidence in yourself, for without such confidence, authority is impossible. Never give an order or make a regulation, unless you are sure you are right, and are determined that you can and will enforce it. Consider well before you lay down the law, but, when the law is given, see that it is obeyed. Do not talk to your class about the discipline that you intend to have. All entreaty—"Now *do* give me your attention";—all self-assertion—"I *will* have order,"—all threats—"If you don't attend, I will punish you," are in themselves signs of weakness. Shouting, stamping on the floor, striking the desk with a ruler will utterly fail to produce more than a temporary lull, for

"He who, in quest of silence, silence hoots
Is apt to make the hubbub he imputes."

To tell the child "you are the teacher placed over him by the trustees, and that he *ought*, therefore, to obey," is simply inviting him to discuss the the grounds of your authority, perhaps to dispute it. Obedience then is not to be had by demands, threats or entreaties. How then, you ask, is it to be obtained? I have already told you by your personal influence, and will-power with the addition of force, if necessary.

On the first day of your taking charge of a school you should be able to fix unerringly upon the leaders in mischief, and those whom you must *compel* to obey. Get hold of the most mischievous boy in the lot, a trustee's son it may be, and give him a sound whipping, punish him until you conquer him, unless there be danger of doing him serious injury; such stubborn pupils do exist, but happily they are very rare. You *must* gain the victory, and if he will not give in by whipping, suspend him there and then. This advice is, I know, unfashionable at the present day, but

you will find it most effectual, and you may never again find it necessary to resort to corporal punishment in the same school.

I would advise you to have a quiet talk with the offending pupil after dismissing the rest, and to call on his parents, give a clear account of the occurrence, and ask for their moral support for the future good of their boy, and, in nine cases out of ten, you will make both the boy and his parent your friends. But, you say again, this may be all right for an able-bodied man, but what is a lady teacher to do? I answer, do the same thing exactly, unless the boy is too big, in which case suspend him at once, if he will not only yield to your authority but beg your pardon for disturbing the school. I have, however, purposely used strong language here, and they say that schools in which such extreme measures are necessary are becoming rarer than they used to be, especially in country districts. What I want you to understand is that your government *must be firmly established* at as early a period as possible after taking charge of a school; in fact, before you can accomplish anything in the way of useful teaching. No doubt this work of school management comes more easily to some than others. There are some who seem qualified and designed by nature to exercise ascendancy over others. They are born with

"An eye like Mars, to threaten and command."

Better still they may be naturally endowed with that sweet graciousness and attractiveness of manner which at once win confidence, and predispose the hearers to listen and obey. And yet those of us who are not thus equipped by nature have no right to be discouraged. Every one may acquire the power of ruling by steadily setting himself to do so, by thinking well over his orders before he gives

them, by giving them without faltering or equivocation, by obeying them himself, by determining in every case and at whatever cost, to see them obeyed, and above all, by taking care that they are reasonable and right, and properly adapted to the nature of childhood, to its weaknesses and its needs. You should not forget, that on taking charge of a school, you are dealing with strangers on whose sympathy and affection you have no claim. No rational teacher should expect to win the love of his pupils at first sight. The theoretical idea of the establishment of the teacher's authority by means of "love and moral suasion" at the very beginning has not proved a success, nor is it ever likely to be so. The Hoosier school-master when asked as to his mode of government naïvely replied: "Well, moral suasion is my theory, but *whipping* is my practice." After your authority has been acknowledged and good government established, you will find that kindness and affection are the strongest elements of your power.

Be careful, however, not to over-indulge pupils, or to over-govern them. Children are the most happy and joyous at the school where the discipline is *strict*, without being *severe*. Proper control develops respect and reverence. Do not have written or printed rules; in fact, no rule should be issued until some wrong doing

makes it necessary. Never give *commands* when a suggestion or a request will accomplish the purpose. Good government requires the teacher to take supervision over his pupils in the play-ground, as well as in the school room. It is there that he can learn most accurately the nature and disposition of each pupil, besides preventing by his presence many unseemly quarrels and disagreements. "Success in school-management depends mainly on watchful and unremitting attention to little details, and on conscientiously grappling with every difficulty as it arises." This is the conclusion of Professor Fitch, one of the most thoughtful of her Majesty's Inspectors of Schools in England, and may be safely accepted as an axiom in school government. In everything we do, we should ever keep in view the fact that the great aim of the teacher's work is the child's self-development physically, morally and intellectually; thus fitting him for a noble life here and its reward hereafter. Smiles truly says:—"Cultivate the physical exclusively, and you have an athlete or a savage; the moral only, and you have an enthusiast or a maniac; the intellect only, and you have a mentally diseased oddity—it may be a monster. It is only by wisely training all of them together that the complete *man* can be found."

ENGLISH IN HIGH SCHOOLS.

BY F. H. SYKES, B.A., HIGH SCHOOL, PORT PERRY.

NO one who compares the system of education in our High Schools of to-day with the system of education in our High Schools of, say, ten years ago can fail to see that important changes have taken place; changes which are not simply

modifications of modes of teaching, but which involve radically different conceptions of the aim of teaching. The introduction and diffusion of the study of chemistry is an example of what I mean. The study of Latin and Greek, every one admits, is a great

means of cultivating the reasoning and observing faculties; but it has been felt that everything reasoned about and observed, so far as life and its objects are concerned, is worthless. Chemistry has won its place because it not only cultivates these faculties, but also turns them in a proper direction. The results of the teaching of chemistry we may soon look for in the improved health of the people, and in the advanced civilization due to a greater command over the forces of nature. The principle that has brought chemistry into our schools is the principle of practical utility; and having thus recognized it in the case of this one natural science we should be alive to its application in other departments of the school curriculum.

Dissatisfaction had, no doubt, long been felt at the treatment of modern languages, and especially of English, by the University of Toronto; but it is only some five years ago that this dissatisfaction took definite shape in the organized protests of the moderns class of '83. It is through Mr. John Squair (now lecturer in French in University College), and an earnest little body of thinkers gathered around him, that a revolution has ensued, which, to-day, is about to crown its success with the adoption by the University of a course of modern language study superior to that of any other American College, and calculated vastly to stimulate original composition and the most liberal study of literature. This change has originated from the same motive that has introduced chemistry into our schools—the longing for the practical utility of the subjects taught.

It is not surprising that this revolution in the University should necessitate corresponding changes in our High Schools, whose system is modelled on the pattern furnished by the University.

Two things especially are now demanded: knowledge of English literature, and ability to write English. These demands are quite in a line with the objects of education, that the pupil may be more, and that he may do more. The great conceptions everywhere embodied in English literature necessarily force the pupil into a wider range of thought and feeling, and in every way expand his nature. But it is not sufficient to content ourselves with a play of Shakespeare, and a book or two of Milton. These are all very well. But to spend a year on such a small fragment of our literature is not wise. We should remember our object will best be accomplished by encouraging the most active, miscellaneous study of this literature; and this can best be done by making the literature class the auditorium for the constant reading of the pupils' favourite authors. If we can only awaken a love for literature, we shall have done a grand work. I have spoken here of reading. To judge from its entire neglect in our upper classes, we seem to have forgotten the value of good reading. Let me insist on its importance. It is not only the source of great pleasure to those around us; but is essential for a proper appreciation of literature. The memorizing of passages of our literature should be carefully attended to and encouraged, that the pupils may have a storehouse of great thoughts, fine images and models of style. It goes without saying that the study of prescribed texts should be almost entirely directed with a view to the realization of the spirit of the work in the mind of the pupil. In the case of dramas, the rendition of important scenes by the scholars will be most beneficial, not only on account of the value of the passages learned, but also on account of the life thus infused into the play. We should not neglect philology. It will be a great work if

we can make the pupil realize that every word has a history. What a broad vision he will have, when once he sees the beginnings of English in a little tribe of shepherd-farmers among the hills of Asia!

But, important as is the subject of English literature, it seems to me surpassed in importance by the second requirement of the University—essay-writing.

The benefits of essay-writing are so evident that it is almost incomprehensible that it should have been so neglected. That it should be the most prominent subject in our system of education will be evident on the following grounds: It unites in itself the benefits of every other subject in the curriculum. It affords a logical training and mental discipline, by demanding concentration and consecutive thinking. As the material of the essay should be within the range of the pupil's observation it will afford an admirable training for his observing powers, and an admirable stimulus for a wider and deeper observation. Then, just as no one enjoys music like a musician, or a painting like an artist, so he, who with more or less ability, can write English will so much the more appreciate literature. And, further, in cultivating his own powers, he will be led to observe with greatest benefit the writings of our best intellects. More still, the young writer will have in the essay a training in originality of thought that our present system does little to favour. But most of all, he will gradually become possessed of a faculty which, whether we consider it in the direction of a business despatch, or of a letter to a mother, or of strong words in public defence of the weak, or in the hundred other ways in which

the pen plays its part in our civilized life, is simply of inestimable value.

I have said nothing so far of grammar. It is because I attach little importance to the subject. What we are most concerned with is to infuse our boys and girls with the literary spirit, to give them wider conceptions of life and its objects, a heart more sympathetic and helpful, a grander view of the beauty and wonder of the universe. And what can the dust and ashes of a mummified grammar do for us? Perchance furnish the material for the keen satire of a *Bourgeois gentilhomme*! Were it not for a faint hope that it may afford a definiteness in the consideration of the proper use of language, I would not hesitate to advocate its entire abolition. For of all the wrongs which an ignorant pedagogy has inflicted on a suffering childhood in the name of education English grammar is the most flagrant.

Nor have I said anything about the countless books on errors in English, etc., in which so many practical teachers have taken refuge. The kind of teaching involved in them should be entirely subordinated to that outlined above. They mark, it is true, the dangerous shoals, but they are themselves devoid of stimulus or motive power; and buoys on a sea that is never sailed are somewhat superfluous. Our main aim is to make the pupils write; when that is secured, we shall be able to make proper use of the charts.

The need of the general adoption of some such scheme as the one here advocated seems absolute if our schools are to fulfil their mission. It demands, however, as teachers, our most earnest and cultivated thinkers. Does it demand too much? Is not the teaching profession to be the ministry of the future?

SHOULD A COLLEGE EDUCATE?

BY E. R. SILL.

IN the "American language" (which is simply the most modern English) a *college* and a *university* are two different things. The terms are sometimes confounded in loose popular speech; but the best usage in this country shows an increasing tendency toward a sharp distinction between them. A failure to apprehend this distinction clearly, and a consequent notion that a college is only a little university, or a university only a large college, has sometimes given rise to odd doctrine as to what a college should teach.

In their original signification the words are not widely different: the *universitas* signifying merely a "corporate whole," in law; the *collegium* a "society of colleagues." But the term *university*, in its development in Europe and this country and the term *college*, in its development in this country especially, have become widely differentiated. That which is properly called a university has its own distinct purpose and consequently its own proper methods and appliances. That which is properly called a college has a different purpose, and its methods and appliances are consequently entirely different.

Ideally, a *university* is a place where anybody may learn everything. And this, whether it be as knowledge properly speaking, or as skill. Actually, however, as found existing at present (since few persons after leaving college wish to study beyond the requirements of a bread-occupation), a university consists of a central college, surrounded by a cluster of professional or technical schools, where special branches are pursued, chiefly with reference to some particular calling.

A *college*, on the other hand, is a place where young people, whatever their future occupation is to be, may first of all receive that more or less complete development which we call a "liberal education."*

The character of the college course, then, should be determined purely with reference to the distinct purpose of the college. The human mind being many-sided, the college undertakes to aid its development on all the lines of its natural growth. The tendency of modern life, moreover, with its extreme division of labour, being to force one or two powers of the mind at the expense of the rest, the aim of the college is to forestall this one-sided effect by giving the whole man a fair chance beforehand. While the special or professional schools of the university provide that a person may go as far as possible on some one line of knowledge, which constitutes his speciality, †

* In one or two instances our state charters have employed these terms, *university* and *college*, in such a way to confuse any rational or usual distinction between them. The State of California, for instance, has a "University of California," consisting of a College of Letters, a College of Agriculture, a College of Mining, etc. Of these only the College of Letters answers to the accepted sense of the term "college," the others being what are more properly called professional or technical "schools." The use of the words at Cambridge (U. S.) illustrates their almost universal application in this country: "Harvard University" consisting (in the language of the annual catalogue) of "Harvard College, the Divinity School, the Law School, the Lawrence Scientific School," etc.

† The Johns Hopkins University, at Baltimore, furnishes one example, in this country, of a "university" in somewhat the sense of the term as used abroad. It does not, it is true, exclude college work; but it maintains chairs of original research, and at the same time provides advanced instruction for gradu-

or of that combination of knowledge and skill which constitutes his profession, the college provides that he shall get such a complete possession of himself—in all his powers: mind, body, and that total of qualities known as “character”—as is essential to the highest success in any specialty or profession whatever. He may get this broad preparation elsewhere than in college. It may come through private study. It may come sometimes—but only to men of extraordinary endowments—from the discipline of life itself. But to the ordinary man, the “average man,” it comes most surely and most easily through a college course. Once having it, from one source or another, a man no doubt fits himself best to serve the world by perfecting his knowledge and skill in some single direction; but without some such broad preliminary development, some such “liberal education,” he will fail not only of his best possible special work, but—what is worst of all—he will assuredly fail of that best service which any man can do for the community, the living in it, whatever his profession, as a complete and roundly moulded man. He will fail (to use Mr. Spencer’s excellent phrase) of “complete living.” He will have entered the world without being equipped for that great common profession, the profession of living—underneath and above his particular calling—the intellectual life.

But (it may be asked) why may not the university, through some one of its special schools, furnish this culture without the need of a college? Because a man is too complex an organ-

ate students on special lines of study, other than those of the usual professional schools. It is to be hoped that the fact of its carrying on under-graduate college work does not indicate any danger of its being checked in its full career, through some possible unripeness of its public for its more advanced work, and warped toward an ordinary university with a college and professional schools, only.

ism to get complete growth in any single region of study, or by any one line of exercises.

But, at least (it may further be asked), might not the ideal university, with its whole circle of knowledges, professional and otherwise, give this complete culture? In other words, why should not the college add to its course all kinds of knowledges, and so itself become an ideal university, where anybody might learn everything? It is the theory implied in this question that produces the tendency toward unlimited “electives” in the college course. There should be no difficulty in seeing why this is an irrational tendency, however attractive it may seem at first sight to the public. It is irrational, because the time actually given to college study is no more than four years; in this time only a few subjects can be studied; and the very essence of the function of the college is, therefore, that it should select among the numberless possible subjects those which promise the greatest educating force. For we reach, at this point in the discussion, a fact that underlies the whole system of any right education—a fact persistently ignored by many persons having to do with educational affairs, particularly in the lower schools and in remote communities, and on the ignorance of which no end of educational blunders have been built. It is the fact that, while every possible knowledge and skill is useful for one purpose or another, *not all are equally useful for the purposes of education.* The college therefore, must select such studies as are most useful for its own purposes. So far as the university undertakes to prescribe any such general or culture-course, it becomes a college. So far as the college forgets to do this, in deference to notions of a “practical” training, or of the magnificence of a great cloud of electives, it does not become a university—for that, in the

nature of the case, is impossible; but it fails of its true function as a college, and is no longer either the one thing or the other.

The ideal of a great university where anybody might learn everything has a peculiar charm for the imagination. Bacon sketched the large outlines of such an establishment in his *New Atlantis*; and ever since his day we have come to see more and more clearly that knowledge does indeed make prosperity, whether for peoples or for individuals. Nothing can be more charming, then, than the thought of a great central institution where the last word on every subject might be heard; where the foremost scientist in every science, the foremost craftsman in every handicraft, should impart the entirety of his acquisitions or his dexterity to all who cared to seek it. Such a university ought, it would seem, to be accessible to every community in this modern world. But all this would not give us a college. That we have only when we have a company of competent scholars providing a course of general preliminary training; a course selected with reference to its particular end of producing broadly educated men. The university, taking the man as he is, would propose to leave him as he is, except for the acquisition of a certain special knowledge or skill. The college, taking the youth as he is, proposes to make of him something that he is not. It proposes no less a miracle, in fact, than the changing of a crude boy into an educated man. A miracle—yet every day sees it more and more successfully performed.

An educated man—what is it that we understand by the phrase? If it would not be easy to set down all that it connotes in our various minds, we should probably agree that it includes, among other things, such qualities as these: a certain largeness of view; an acquaintance with the intellectual life

of the world; the appreciation of principles; the power and habit of independent thought; the freedom from personal provincialism, and the recognition of the other point of view; an underlying nobleness of intention; the persistence in magnanimous aims. If there has not yet been found the system of culture which will give this result every time and with all sorts of material, it may at least be asserted that a course of study—whether in college or out—somewhat corresponding to the course pursued at our best colleges has a visible tendency to produce this result. Whether it might be produced, also, by some entirely different course is certainly a question not to be rashly answered in the negative. All we can say is that any course which has as yet been proposed as a substitute has proven, on experiment, to have serious defects in comparison with it. Our wisest plan is to hold fast what we already know to be good studies, making farther experiments with candour and fairness; avoiding, on the one hand, the timid pre-judgments of those who are afraid of all that is not ancient and established, and, on the other hand, the crude enthusiasms of those half-educated persons who think that nothing old can be good, and nothing new can be bad.

Two principal proposals of change in the college course have been made. One is that the modern languages should be substituted for the ancient. So far as the complete substitution has been tried, most observers would probably agree that the experiment has failed. In other words, more persons are found to have studied modern languages without having become "educated" persons by that means than are found to have studied the classics without that result. College observers, unbiassed by any personal interest as teachers on either side, would probably be found unani-

mous as to this point. Without discussing the question theoretically here, we would only insist upon this: that, so far as any change of this kind is made, it be made only on the ground of greater serviceableness for purely educational purposes, as being better fitted to "educate the man"—the only test of studies with which the college has anything whatever to do. Probably Mill's answer, or counter-question, will eventually be found the wisest one as between the classical and the modern languages and literatures: "Why not both?"

The other principal proposal of change is the substitution of natural science in place of the "humanities." To the addition of a certain amount of natural science, enough, certainly to impart its admirable methods of research, and, what is more, its admirable spirit of uncompromising adhesion to the exact truth, no one is likely to object. But when it is proposed to make any radical substitution of the material studies for the human studies making courses (as has been done) without Latin, Greek, Literature, Logic, Philosophy, Ancient History, etc., supplying their places with the natural sciences, it is well to consider carefully, first, the result of the experiment so far as it has been tried; and, secondly, certain well-established principles concerning the human mind in its relation to studies. As to ascertained results it is to be said that for some time now there have been, in several of our institutions of learning, courses having these contrasted characters running

side by side. We will not here offer any testimony of our own as to the comparative results of the two in the production of broadly educated men. We would only suggest to those who are in any doubt upon the matter, or who have any radical change of college courses in view, to look into the results of the experiment for themselves and to take the testimony of those who have had opportunity to observe them. The effect of such an examination will be likely to produce hearty agreement with an editorial writer in a late number of *Science*, who remarks that "the introduction, of scientific studies in our educational systems has not brought about the millennium which was expected." Much good, no doubt, they have done, when introduced in proper proportion. Their methods have certainly influenced favourably the methods of the older studies. But, after all, we come back to the truth that, of the two groups of studies, both indispensable, the humanities furnished the greater growth-power for the mind, because they are the product and expression of mind.*

(To be continued.)

* Sometimes we hear the curious remark made, perhaps by one of the weaker brethren among those very useful persons, the dealers in second-hand science (popular science), that the book of nature is the expression of the mind of God, while other books only express the mind of man. But it does not require great acumen to perceive that the mind of man and all its productions are also the work and the expressions of the same Author—His Bible, one might say, to carry on the figure, while material nature is only His spelling-book.

THE SCOTCH BLUE BOOK.

ONE does not expect, in exploring between the covers of a Blue Book—ground consecrated to the particular and the concrete—to be suddenly called upon to pause and appraise the value of a whole cluster

of first principles and neatly cut abstract propositions. Such, however, has been our experience, on lately going through the Report of the Council on Education in Scotland for 1884-85. Before the dust settles down

finally on this volume, we propose to rescue a few of its educational dogmas from the fate that commonly befalls precepts laid up in Blue Books. To those who are just beginning their careers as teachers there may be something new and profitable in what follows; and teachers whose careers are half-run or more will have learned the art of pardoning truisms and commonplaces when expressed with freshness and flavour. We quote from Mr. Ogilvie's Report.

I. On the commencement of school life:—"A show of early blossom does not mean the best matured fruit, and it is open to question whether the infant prodigy, cribbed and cabined in school, tends to establish the ideal of a sound mind in a sound body. The author of 'Friends in Council' writes:—"When we are considering the health of children, it is imperative not to omit the importance of keeping their minds fallow, as it were, for several of the first years of their existence; the mischief perpetrated by a contrary course, in the shape of bad health, peevish temper, and developed vanity, is incalculable. Parents may be assured that this early work is not by any means all gain, even in the way of work. I suspect it is a loss, and that children who begin their education late, as it would be called, will rapidly overtake those who have been in harness long before them."

II. On infant instruction:—"At no stage is the importance more obvious of special aptitude in the disposition, character, and manner of the teacher. An emotional nature and sympathy with child-life are worth more than breadth of knowledge and mere propriety of method. The born infant teacher could not be better portrayed than in the character of Dickens, given as follows in a recent sketch by his daughter:—"He had a wonderful attraction for children, and

a quick perception of their character and disposition, a most winning and easy way with them, full of fun, but also of a graver sympathy with their many small troubles and perplexities, which made them recognize a friend in him at once."

III. On the kindergarten:—"The theory of infant instruction is no doubt susceptible of improvement. The kindergarten, whatever view may be taken of its merits as a whole, has many elements which might be beneficially incorporated in any system of infant training. The stereotyped form of object lesson, bristling with hard words, contributes neither to intelligence nor vocabulary. *Opaque, ductile, globose, graminivorous*, are the kind of stones given to children whom a simple story would enrapture."

IV. On discipline:—"Discipline is, of course, the first, second and third condition of school management; but its secret lies in occupation, and it was the normal absence of this primary element that was most to blame for the traditional asperity of school-life. The history of the word discipline is a curious comment on education. It has long ceased to be a synonym for learning. Scotch phraseology witnesses to the same degeneracy, and shows how universally the stone of hard blows was given with, if not for, the bread of instruction. 'Fa fuppit (whipt) the laddie?' is the Scotch equivalent for 'Who was the boy's teacher?'"

V. On the common error of making arithmetic a subject of instruction too early in school life:—"Arithmetic is the stumbling-block of the first standard. It is perhaps the least valuable, as it is confessedly the most irksome requirement of the Code. It is forcing a faculty of later development to the comparative neglect of linguistic and other imitative powers which are in full play. 'It is vain,' says Mr. Sully, in his 'Outlines of Psychology,'

'to try to cultivate the power of abstraction before the powers of observation (perception) and imagination have reached a certain degree of strength.' This self-evident proposition is one of the best accepted principles in the modern theory of education, though there is reason to apprehend that it is still frequently violated in practice. Child nature solves the question in its own unerring fashion. Children of the better classes, instead of an empirical programme, follow in their earliest years the dictates of their own sweet will, yet they never lisp in arithmetical numbers; they eschew what is abstract, but read and run through a whole library of juvenile literature."

VI. On the decay of mathematics in Scotland:—"The old classical system was lacking in breadth, the modern substitute is lacking in backbone. The paramount value of mathematics, for instance, is admitted by educationists of every shade. Dr. Bain, the apostle of scientific training,

says: 'As to mathematics, the question is fundamental, if there is to be any science at all, over and above a little natural history, there must be mathematics.' The allurements of higher subjects have driven mathematics to the wall."

VII. On average talent:—"Average ability is as certain as individual ability is uncertain, just as human life, however precarious in the individual, is reducible in the aggregate to arithmetical calculation. This conception, if kept in mind, would not only give to teaching a more scientific and stimulative aim, but would, to a material extent, eliminate its disappointments and mitigate, if not abolish, its lingering severity. The stupidity of children is too often the burden of the teacher's complaint, which simply means that they are stupider than the teacher thought, or, in other words, he has pitched his average too high, and day after day persists in misunderstanding the evidence of inductive facts."—*Educational Times*.

EDUCATIONAL NOTES.

EDUCATIONAL NOTES AND SUMMARY.—The General Reports of Mr. Fitch, Mr. Sharp and Canon Warburton, in the English Educational Blue Book, are all more than usually interesting this year, and that of Mr. Fitch dwells on educational topics that have an application far wider than that which concerns elementary schools only. As an example of this kind, we may mention the chapter on Methods of Teaching, from which we quote—because of its general interest—a paragraph which goes to the root of a question often debated amongst teachers:—

"It is a frequent complaint that, because the tests applied at the examination day are definite and some-

what mechanical, the processes of instruction must also be mechanical. The character of the examination, we are told, dominates the character of the teaching, and, if certain technical results are mainly looked for, nothing but dry technical teaching and 'cram' can be expected. There is great fallacy in this reasoning. At the universities, and wherever the results of instruction have to be estimated in a brief and summary way, the test applied is apt to seem crude and formal—a problem, a piece of translation, a demonstration, a theme. But a college tutor or a master in a public school who gave this as a reason for the adoption of mechanical and uninteresting processes, or for the constant

use in his teaching of exactly the kind of exercises which were likely to be set at the examination, would be convicted of incompetency. He should know that the greater the freshness and life with which his teaching is suffused, and the more sympathy he has awakened in his pupil in regard to the thing to be learned, the better able that pupil will be to pass the test required. If one wants to know whether a young child can or cannot read an easy book, write and spell his own language correctly, and work a sum, a very simple testing exercise suffices. It occupies only a few minutes, and the whole process of examining and of marking the 'passes' may easily be described as one of, rather uninspiring routine. But this does not at all imply that the methods in use during the previous year for teaching to read and to write and to count need be unintelligent. On the contrary, where the processes of teaching are most thoughtful, pleasing and varied, there the simple exercises given at the examination are most easily and well performed. The teacher who thinks to obtain 'passes' by fitting his mode of teaching to the mode of examination not only allows himself to lose sight of the higher

aims which should control all educational effort, but fails also to fulfil the lower aim. Even when the only object of arithmetic is to work sums correctly, this object is most quickly attained by teaching the principles of number by the use of simple demonstration, and by such questioning as causes the thought of the scholar to exercise itself on the nature of the problem to be solved before attempting to solve it. Those who assert that mechanical methods of instruction are the best modes of attaining the 'results' which the Inspector with the Code before him seeks to ascertain, either do not understand the art of teaching, or are using the argument as a pretext for relapsing into routine. And, indeed, to a large class of teachers, routine will always seem easier than intelligence. Verbalism and mechanism will, under any possible system of school administration, possess a fatal attractiveness for teachers of a certain order of mind. They will interpret all official regulations in the narrowest sense; will ask—not 'How can I best teach this subject?' but, 'How can I shape my teaching best to the probable mode of examination?'"

Ibidem.

SCRIPTURE LESSONS FOR SCHOOL AND HOME.

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

NO. II. THE NINTH COMMANDMENT.

INTRODUCTION. This commandment closely connected with eighth—stealing or lying with the hands. That forbade taking neighbour's goods, this forbids taking away his character—and like that, this includes many forms of the sin.

I. THE SIN—*Lying (a) against others.* (Read 1 Kings xxi. 1-13.) An old story—familiar to all. Ahab wanted Naboth's vineyard—how did he get it? Jezebel got these men to bear direct *false witness* of worst kind, because done solemnly in court of justice. Is such a thing ever done now? Often hear of it in law-courts

—done to try and help some neighbour—get him off—please him as these men did it to please Jezebel. But the sin just the same to bear false witness for or against neighbour.

Remind also of false witness against Christ. (Matt. xxvi. 59-61.) Christ had said these words, but did not mean what they made out He meant—therefore witness was false. So also Stephen unjustly condemned. (Acts vi. 14.) Shows how careful must be in repeating things others have said. So far have spoken of lying against others. Most often perhaps persons (b) tell lies for themselves. Remind of Cain—jealous, angry, murderer—questioned by God—told lie, hoping to conceal a sin. This very common with children—can only remind them of all-seeing eye of God.

Another form of this sin is *slandering*, i.e., speaking against people either openly or privately. Often rebuked in Book of Proverbs. May arise from *malice*, wishing to injure others—or *thoughtlessness*, from mere love of talking about others—or *uncharitableness*. Anyhow, it is a most serious evil—likely to do them much harm. Christ rebukes this judging of others in His Sermon on the Mount. (Matt. vii. 1, 2.) We cannot judge fairly—therefore should never speak evil of others.

II. THE DUTY—*Truth*. (Eph. iv. 15.) What two things are joined? Truth about ourselves, love about our neighbours. Said to be very difficult to find absolutely truthful person. Many warnings in Bible against liars—many blessings promised to the truthful. (Prov. xii. 22, etc.) Sometimes called upon to speak of others—to tell of their faults—e.g., Joseph had to tell his father of his brother's wrong-doings—must do it charitably, i.e., in love—put best construction on others' conduct—not say more than are obliged—not “tell tales.” So this Commandment teaches to be

truthful, honourable, upright, charitable in *word*, as eighth commandment taught in *deed*.

LESSON. *The lip of truth is His delight.*

NO. 12. THE TENTH COMMANDMENT.

INTRODUCTION. Let teacher hear children repeat Commandment carefully, and see that they pronounce words accurately. Then explain meaning of “covet,” by wishing for other person's goods so as to deprive him of them, and generally discontent with our own position and circumstances.

I. THE SIN—*Covetousness*. (Read 2 Kings v. 20-27.) Who was Gehazi? Servant to Elisha—a simple prophet—living quietly and in humble way, yet declined Naaman's money because he had sufficient and was contented. Not so Gehazi. How did Elisha discover him? Punishment not only on himself, but his family—probably they had been discontented—urged him on to improve his position—shared his punishment.

Another instance. Judas joined Christ evidently for what he could get—honour, fame, riches, as disciple of Him who could do such wonderful miracles—got charge of the bag or common purse—stole from time to time—not content yet—wanted more—betrayed Christ—got the thirty pieces—remorse—hanged himself. Warn children of deadly nature of this sin. Begins with *discontent* with condition in life—not enough money, pleasure etc., leads to *desiring* others' things—then follows temptation to get them without working for them, either by gambling, lying, or stealing.

Another way of breaking Commandment is to set heart on earthly things—making them first object of life—also in living for self, not for others. St. Paul calls covetousness idolatry,

because takes man's heart away from God.

II. THE DUTY — *Contentment.* (Read Job i. 8-22.) Not known when Job lived—probably in time of Moses. What was Satan allowed to do? To take away his cattle, children, goods—afterward to afflict his body (Job ii. 7.) How did Job bear it? Was content to leave his life in God's hands—knowing He did all things well. Last chapter tells how he was rewarded. God gave him twice as much as before. (Job xlii. 12.)

This contentment a great blessing.

St. Paul says that enough for us to have food and raiment. Remind of Christ, who had not where to lay His head—was born in a stable—lived in lowliness. What does St. Paul say of himself? (Phil. iv. 11.) Also bids us be careful for nothing. Contentment brings happiness to selves, cheerfulness toward others, prevents anxiety for future, encourages industry helps us to lay up treasures in heaven, to mind heavenly things. So teaches spirit of Christ Himself.

LESSON. *Godliness with contentment is great gain.*

MINISTER OF EDUCATION.

THE following is so fully in accord with the views expressed in the columns of this magazine, that we have reprinted it from our able contemporary.

Sir Lyon Playfair, in his presidential Address to the British Association at Aberdeen, drew a severe indictment against our Government, not only for its neglect of the claims of Science, but also for its indifference to the organization and efficiency of the Secondary and Higher Education of the country. "Secondary Education," he told his hearers, "is chaotic, and remains unconnected with the State, whilst the Higher Education of the Universities is only brought at distant intervals under the view of the State." Admitting the truth of this—why, it may be asked, should it be a matter of reproach to the Government that it does not regulate the Secondary and Higher Education as it is regulated in the State-founded and State-paid Schools and Universities of the Continent? Our Secondary Schools, whether we regard their origin, organization or aim, owe nothing, or next to nothing, to the

State. They have sprung up sporadically, it may be, and developed independently of the State, and it seems therefore neither unreasonable nor unjust that the policy of the State towards them should generally be one of *laissez-faire*.

Nor is it at all certain that this is not the policy which is justified by results. Sir Lyon Playfair, in another part of his address, gives us the measure of the calamity we suffer from being in our Higher and Secondary Education free from State control. He tells us that, "After the Franco-German war, the Institute of France discussed the important question 'Pourquoi la France n'a pas trouvé d'hommes supérieurs au moment du péril?'" The general answer was, because France had allowed University Education to sink to a low ebb. Before the Great Revolution, France had twenty-three autonomous Universities in the provinces. Napoleon desired to found one great University at Paris, and he crushed out the others with the hands of a despot and remodelled the last with the instincts of a drill-sergeant." Precisely so, and,

with this example before his eyes, Dr. Playfair calls the autonomy we possess as regards our Secondary and Higher Education "chaos," and desires to reduce this chaos to order by bringing Secondary and Higher Education under State control, overlooking, apparently, the fact that in 1870 it was in University Education that France felt most severely the heavy hand of the State.

M. Jules Simon, a former Minister of Education in France, thus writes in 1882 of the monopoly of University Education established by Napoleon: "The Organic Decree of 1808 had a double import. It created a body of functionaries charged with the instruction of all classes throughout the country under a single management, and it invested this body in the person of its chief with absolute authority over all educational establishments set on foot by private adventure alongside of it. . . . It was an intellectual and moral despotism side by side with a political and administrative despotism." It took long for Education in France to emancipate itself from this intellectual yoke. "It has been," says M. Simon, "destroyed in three stages, and at long intervals: the monopoly of Primary Education by the law of 1833, that of Secondary Education by the law of 1850, and that of the Higher Education by the law of 1879." The extent of the control maintained by the State in the domain of the Higher Education may be inferred from these words of M. Simon: "During the fifteen years which followed the passing of this memorable law [of 1850], the Higher Education alone remained subject to ministerial despotism. No school could be opened, no single lesson could be given, without the permission of the Government, which had the right of refusing, and which generally exercised that right."

Whatever, then, may have been the

cause of French intellectual sterility during 1870 and after, it cannot be set down to the want of connection between the Higher Education and the State. That connection existed with a vengeance.

Sir Lyon Playfair's specific for remedying some, if not all, of the shortcomings of our educational system is the appointment of a Minister of Education. We do not think he was particularly happy in the reasons he gave for such an appointment, nor are Englishmen likely to be convinced of the urgent need of such a Minister by being told that in this respect they are inferior to Egypt, Portugal, Greece and far off Japan. Such a line of reasoning would be quite as likely to raise doubts as to the connection between the national greatness and national well-being of a State and its Education Minister.

It is not to France alone that we need look to find evidence that a Minister of Instruction may possibly use his authority to extend his own power and to crush out all ideas that conflict with his own. It was the Cultus-Minister of Prussia, Raumer, who, suspecting Froebel of socialism and irreligion, issued an edict forbidding the establishment of schools after "Friedrich and Karl Froebel's principles,"—uncle and nephew included in one condemnation, although it was only in respect of the latter that there could have been any foundation for the suspicion of the Minister.

Sir Lyon Playfair, when he casts the horoscope of the future, and predicts that in the next Parliament a "Minister of Education will be created, as a nucleus round which the various educational materials may crystallize," is on unassailable ground; for it is as difficult to refute a prophecy as a sneer. Nor do we quarrel with the accuracy of his description of the function which he assigns to the Minister, as, oddly enough, he

uses the phrase to describe it which, above all others, conveys to the mind the idea of all that is most objectionable to the appointment he predicts.

Definite "crystalline" forms prevail in the inorganic world, not in the organic, and, when crystallization sets in, growth and development end. This is the fate that overtook France when the crystallizing process was at work under the most favourable con-

ditions. This is the fate of China, whose "educational materials" crystallized long ages ago. For ourselves, until our educational methods and organizations attain all the growth and development they are capable of, we do not very much care to see them crystallize in definite form about the nucleus of an Educational Minister.—*Educational Times* (London, Eng.).

CORRESPONDENCE.

HIGH SCHOOL INSPECTION.

To the Editor of EDUCATIONAL MONTHLY:

DEAR SIR,—Being thoroughly in sympathy with the position which the Magazine has held on the Inspection of High Schools and Collegiate Institutes, I hope you may be able to find space for the few lines following from one who is in active service in one of the Secondary Schools.

What are the legitimate duties of a High School Inspector? Self-evidently, those appertaining to intelligent supervision, judicious counsel, and, when necessary, professional assistance of a more substantial nature even than counsel. The question is, Are these duties being performed, can they indeed be performed, satisfactorily?

With regard to the first point advanced:—Intelligent supervisions. Is it possible for any single individual, however accomplished and well-meaning, himself remotely resident from the scene of his jurisdiction, to exercise continuous and intelligent supervision over a multiplicity of schools, with the members of which he comes in personal contact, say, once in eighteen months or two years?

Yes and no.—Any individual of ordinary ability and common-sense will readily ascertain whether the laws and regulations as regards buildings and educational appliances are complied with by Boards of Trustees. If not, there is the Department to appeal to. Here the Inspector is of use; his criticisms of value, always provided that the Trustees be enlightened, amenable to reason, solicitous of the grant, and interested in their school and its standing in the Province. With regard to the internal working, the interior economy of any particular High School or Collegiate Institute, no single individual being a stranger to the locality, whether Minister, Inspector, or Teacher, is competent to judge from a cursory visit of the every-day working or general efficiency of any such establishment. That this is the case has been proved conclusively time and again, and once, at least, quite lately, when an estimable and experienced master and,—as the result proved—a reputable institution and competent class, incurred the hot displeasure and unmerited censure of a visiting official. It is manifest that intelligent supervision was not exercised in this case. Therefore if the test has so signally

failed in one instance, it may have failed before, it may fail again.

Now for the second point:—judicious counsel. In what does this consist? In what should it consist? It is an unwritten law, not only of the barest courtesy, but also of the truest policy, with professional men of all degrees, to shield to the utmost of their ability from unprofessional, and consequently promiscuous, censure, those members who, ill-advisedly, or, through mistake or oversight, have infringed professional customs, or offended professional etiquette, and this, while striving concurrently to remedy professional wrong and eradicate professional misdoing. What do we find the practice with regard to professional inspections? Not tempered reproof, not just criticism in private, not judicious counsel at all, but outspoken and discourteous utterances of disparagement, conveyed to the Department, to the Trustees, who are sometimes only too eager to profit by the error, and to the public generally, already little enough in sympathy with culture and the outlay which culture necessitates.

All this is overstepping the mark with a vengeance. The Inspector, frequently not a better man than the one he undertakes to castigate, loses sight of his position as counsellor and critic, and assumes the dictatorial tone of a potentate, the dogmatic air of an autocrat. This is overstepping the bounds of courtesy, of justice and of freedom. Principals are not slaves; they, too, have opinions, feelings, responsibilities. Inspectors are not irresponsible intellects or infallible criteria. They, too, have equals, and possibly—masters! Wrong is indisputably wrong, and can never be made right. Wrong as wrong should never be tolerated, much less justified, least of all by those deputed to correct wrong; but, wrong has never been rectified by the lash, freedom is

bought, not rapined. Its name is synonymous with recompense, not coercion. To gibbet an individual or an institution before the eyes of an unsympathizing public, or even before the eyes of those who have possibly been taught to esteem the individual, and to look with feelings of respect, if not affection, upon the institution, is unjust, tyrannical, and altogether beyond the pale of the inspectorate. It is an outrage to professional courtesy, and a death-blow to professional liberty. It should not only be discountenanced; it *must* be discontinued.

Lastly, the question of professional assistance; of more substantial aid than counsel, criticism and suggestion; of positive good wrought by personal influence and mediation. It cannot be denied that this aid has sometimes been given. The Inspector as mediator between the Government and the public, as advocate between professional right and public pig-headedness and opposition, has been useful, and that too quite lately. But, if that usefulness is to continue, the thoughtful and earnest Inspector will see that the surest way to maintain the standard of usefulness is to maintain the standard of trust, of forbearance, of professional sympathy and respect. Decay and dissolution ever commences from within. The citadel true to itself, will often repel the onset of inimical hosts. The history of National decline has oftenest been written in the blood of self-immolation, or in that shed at the altars of corruption and treachery at the hands of a hierarchy true to naught but self-indulgence and a lie. Disparage the scholastic calling openly, and the people will soon learn to believe the calumny. The unprofessional public will be neither unwilling nor unready to further the cause of distraction, the cackling of geese in this instance will not save

the capitol; it will hasten its downfall. And, moreover, if a blow struck by a professional hand make the first breach in the wall of confidence, what wonder if the engines of popular prejudice batter down these walls that have taken so long to rear; that are even now held precariously and by

uncertain tenure; that can never hope to become stable, till a united loyalism garrisons the ramparts, rendering then invincible to the attacks of their foes.

Yours, etc.,

MASTER.

EDITORIAL.

HAPPY NEW YEAR!

TO our active friends and warm supporters, the customary and pleasant words, usual at this season, we speak, laden with good wishes and kindly feelings of mutual friendship, begun in common work, and knit into bonds of respect, power and hope. Our labour has been brightened with the consciousness that all the year we have been speaking to hundreds and thousands of Canada's most intelligent, influential and faithful workers, in the silence of the study hour or in the activity and stir of school life. The sign of recognition by word or letter, telling of work done to help or to cheer was, to us, a living voice of power out of the vast stillness, inciting to increased zeal or patient endurance for the sake of fellow-workers, or on behalf of our country's abiding energy and fruitfulness. With vivid remembrance of the youthful day, yet not remote, when, in the unmeasured field of learning, to acquire was life, and to assist better than life, we cherish the hope of leading the thirsting aspirant to the radiant fields of literary exertion, of inducing ingenuous youth to attempt the rugged path of high achievements for the sake of the life which comes only to the honest and earnest seeker. The endeavour

has been made, and is continued, to be a little light clearly shining. In the coming days may the ability and power be exceeded only by the desire.

THIS number is the first of Vol. VIII., reminding us that a year has just closed, balance struck and a new account opened for another volume of THE CANADA EDUCATIONAL MONTHLY. To all the friends who have aided us in any way by approving word or friendly pen—and the number is ever on the increase—we tender our cordial thanks; we pay special thanks to the friends who have availed themselves of our columns for their business purposes. We beg to assure them that in their line of work this magazine is becoming constantly more effective, as it now reaches a much larger number of readers than at any time heretofore. Better value to the advertisers means more support to the Magazine. THE MONTHLY goes to subscribers in every Province of the Dominion, and many of the neighbouring States. As in the past, we hope the friends of education throughout the wide Dominion will continue the hearty support given to this journal, that Canada may have an educational organ worthy to represent it at home and abroad. The list of both classes of supporters can be

very much increased. We invite the educators of Canada to make use of our pages to advance the highest interests of the country. Any one who has anything of value to say, not necessarily on technical school matters, cannot speak more effectively anywhere than in this magazine, nor to a more appreciative and sympathetic circle of readers.

SCHOOL TRUSTEES.

NOT a few people think it a virtue to criticise school trustees as ignorant men, unfamiliar with school work, ill-adapted to their position. This is not only ill-mannered, but is unjust. It is true that many men serve on Trustee Boards who have not scholarly attainments, who are not familiar with the science or art of teaching; but, with few and unimportant exceptions, they are gentlemen of correct judgment, good spirit and fixed purposes in the right direction. As a rule, they are the best men Canada can place in these positions of trust at the present time. We have no sympathy with the good people who are continually decrying our men in public places of trust and responsibility. If they are not the best men the fault is that of the electors. In general, the best trustees are the non-professional class. They rarely disturb or harass a teacher who does good work. There is one danger which constantly menaces our Public School Boards, and that is partyism; therefore we note as a favourable indication that very few Boards have adopted the plan of electing the trustees on the same day as councilmen or aldermen. It is wiser to consider school interests and the best men to manage them apart from the distraction and excitement of any other public election. We hope the electorate will take care to select fit and proper men for these high interests.

TRAIN THE BOYS TO BUSINESS.

THERE is one element in the home instruction of boys to which too little attention has been given; and that is the cultivation of habits of punctuality, system, order and responsibility.

In many households boys' lives are generally the calmest of their existence. Up in the morning just in season for breakfast; nothing to do but to start off early enough not to be late; looking upon an errand as taking so much time and memory away from enjoyment; little thought of personal appearance except when reminded by mother to "spruce up" a little; finding his wardrobe always where mother puts it; in fact having nothing to do but to enjoy himself. Thus his life goes on till school ends. Then he is ready for business. Vain thought! At this he perhaps meets with his first great struggle. Many times during our business experience have we witnessed failures caused by the absence of a thorough home discipline. How the boy without this great advantage fails is thus fairly described by the *Scientific American*:

He goes into an office where everything is system, order, precision. He is expected to keep things neat and orderly, sometimes kindle fires, or do errands—in short to become a part of a nicely regulated machine, where everything moves in systematic grooves, and each one is responsible for correctness in his department, and where in place of ministers to his comforts, he finds taskmasters, more or less lenient to be sure, and everything in marked contrast to his previous life. In many instances the change is too great. Errors become very numerous; blunders, overlooked at first, get to be a matter of serious moment; then patience is overtaken, and the boy is told his services are

no longer needed. This is the first blow, and sometimes he never rallies from it. Then comes the surprise of the parents, who too often never know the real cause, nor where they have failed in the training of children.

What is wanted, is for every boy to have something to do; to have something to do at a definite hour, to learn to watch for that time to come; to be answerable for a certain portion of the routine of the household; to be to anticipate the time when he may enter the ranks of business, and be fortified with the habits of energy, accuracy and application, often of more importance than superficial book-learning.

THE BIBLE IN THE SCHOOL.

TWO distinct questions are under discussion in connection with the use of the Bible in our Public Schools: 1. Shall the Bible in its integrity be used, or only authorized selections? 2. How shall the Bible be used; for devotional reading only or for instruction?

The first question is the less important. Selections must, in fact, be made, either by each teacher for his own school, or by some central authority for all the schools. The printing of the selections in a separate volume was, in our judgment, wholly unnecessary. The end sought might have been attained at a trifling cost, if a syllabus indicating the portions of Scripture most suitable to be read in schools had been prepared for the use of teachers. Now that the book has been provided, however, it is not necessary to regard it as displacing the Bible, though the tendency is clearly in that direction. As was indicated in the reply of the Ministerial Association of Toronto to certain questions submitted by the Principals of the Toronto Public Schools, the use of the volume of selections is consistent

with the placing of the Bible in the hands of the pupils so that they may read with the teacher the passages indicated. The Protestant Board of Education for Manitoba has adopted the book in use in Ontario, and has at the same time passed regulations requiring each pupil from "standard three" upward to provide himself with a Bible in addition to other textbooks. It is also the intention of the Board to prepare notes and questions to be used by the teachers in giving Bible instruction.

This is the way in which the Manitoba Protestant Board proposes to deal with the second question, which is really the vital one: How is the Bible to be used in our schools? Is it to be taught? Are its truths to be impressed upon the pupils? Or is it simply to be read without comment or explanation? There is no doubt that the law in Ontario at present excludes any teaching of the Bible as a part of the regular school work. Is this the best state of matters? Or is it the best attainable in our circumstances? The Rev. J. Alexander asks pertinently in a recent letter to the *Canadian Baptist*: "If it is our duty to teach and enforce the principles of a genuine morality in schools . . . How are you either to define the nature and range of ethical obligations, or the authority and motives by which these are to be enforced, without a reference to the Bible?" Moral training is an essential element of education. The Bible is the best instrument for moral training. Why should it not be used in the most effective way?

We have no quarrel with those who insist that it is the duty of parents and pastors and Sunday school teachers to give religious instruction; but why should the Public School teacher be debarred from impressing the loftiest lessons, and appealing to the highest motives as they are set forth

in the Bible? We are thoroughly at one with those who urge that high character in the teacher: is more potent than mere formal instruction in influencing the minds and hearts of children—that trustees should take care to select teachers “in whom the principles of morality are based on the only sure foundation,” *i.e.*, religion. Certainly, but why should not high character and formal instruction be combined? If the teacher should “interfuse his school with his own highest manhood”; if the highest manhood is to be attained only by being in right relation to God and man; and if the Bible sets forth, as no other book does, how that relation is to be established, why not allow teachers and scholars to drink together from the one fountain of truth? If it is of consequence to secure teachers in whom the principles of morality are based on faith in the Living God, why should these teachers, when secured, be hindered from laying the same foundation for the morals of the children under their care? If “local option” may be brought into play to secure Christian teachers, why not also to permit Christian teaching, when agreeable to the large majority of parents? Is it necessary to adopt a uniform rule in regard to this matter in all schools?

We wish the children in our Public Schools to grow up truthful, honest, chaste and dutiful. How is this end to be secured? By bringing them to trust and obey Him whose two great commandments are: “Thou shalt love the Lord thy God with all thy heart,” and “Thou shalt love thy neighbour as thyself.” That is, by making them religious; for love to God and man is the essence of religion. Of this religion, morality is the fruit, and, in this sense, “morality is the outcome of creed”—not necessarily the creed of any of the sects, but the creed whose fundamental and

essential article is this: “God is Love”—a creed which inspires hope and stimulates by holy endeavour in the following of Him in whom God's love has been manifested to us. If the Scriptures which set forth these blessed truths are to be read by the scholars, why should not the teacher ask, “Understandest thou what thou readeest?” If the teacher is free to impress lessons of courage and patriotism from the records of history, why should he not be at liberty to impress lessons of faith and hope and love from the Word of God?

SCHOLARSHIPS.

IT is startling to note the celerity with which new theories gain ground in these days. As everyone must admit, the enunciation and investigation of theory is a perfectly legitimate means of scientific progress. Unfortunately, there perhaps never was a time when people were so ready to turn their theories to practical account, and to gauge by them the usefulness, even the very claims to existence, of institutions which have long been occupying an apparently prominent and useful position. By some such hasty process of deduction from theories still on probation, or of induction from a too limited observation of facts, those who believe in scholarships, on principle, and who favour them, have been suddenly put into the position of defending an institution which has commended itself for centuries to the approval of the heads of universities, and the leaders of educational thought. What was, till very recently, considered an important and efficient aid to university education is now denounced by some as mischievous, unworthy, base, utterly wrong in principle, or at least old-fashioned, and the cry of “abolish” is uttered by many, and echoed by more, who have failed to

look at the question in its broadest aspect, or to select for their point of view an impartial or practical standpoint.

Of what nature are these objections? Here is a typical one which, at first sight, appears to have some weight: The awarding of a scholarship, a prize of money offered for competition, is asserted to be conducive to wrong methods of study, to induce the student to load his memory with masses of undigested facts and formulas, with the object of deceiving the examiner into the belief that the candidate is more proficient than he is in reality. Ergo, from this assertion: "Scholarships are hurtful; they lead to 'cramming.'"

Let us examine this claim a little. There are at least two factors to be considered, the examination and the competition. It is asserted that erroneous methods and motives are the direct consequences of the competition. Suppose that instead of a competitive examination, which, among other purposes, serves that of deciding scholarships, we have a standard of eighty-five per cent. fixed for first-class honors. Does any one suppose that an ambitious student is going to make less effort to win a first-class than he made previously to excel his competitors? If the "cramming" is induced by the desire to do well, we contend that the motive will be just as strong when the student is working against the inflexible standard as when he is working against the best that his competitors can do. It is true, the task before him will not be enlivened by any of the sense of exhilaration, which any properly constituted young man will feel, and should feel, when competing generously with his fellows; but the dread of failing will be present with increasing force, and we repeat that if the desire to do well makes him resort to unworthy means, it is idle to

say that the temptation with an eighty-five per cent. standard (representing as it does about the possible maximum) will not be as great as in a competitive examination. Viewing the question from this side, the only possible motive for intellectual obliquity is the desire to excel, a desire equally present under either system. Therefore, it is obviously unfair to saddle it upon the competitive examination. The only remaining excuse must be in the nature of the examination itself. We suspect that the number of students has been infinitesimal, who have won scholarships by the methods above indicated, methods which presuppose enormous credulity and inefficiency on the part of examiners, and an equal lack of common-sense, and common prudence on the part of the candidate in adopting so unlikely a plan of study, a plan so silly upon the face of it that nothing short of a succession of the worst sort of examiners could induce any young man of ordinary intelligence to attempt it.

With extreme regret and reluctance, we refer to another objection which is rather strongly urged. It is stated that the competitions for honors and scholarships lead to a bad state of feeling among the students—rivalry, envy, pride, self-conceit, selfishness are some of the words which express the feeling supposed by some to prevail among our generous youth. To be obliged even to discuss the probability of the presence of such a condition of affairs is humiliating, and we view this and similar assertions as a slander upon our young men, gratuitous as it is false, and affecting not only the reputation of the present generations of undergraduates, but that of hundreds of honourable men who won the highest honors of our universities without a thought of the contemptible meanness, which, it is stated, prevails among competing candidates. Where is the proof? Where

are the men who are prepared to come forward and declare that they have been affected by the feelings mentioned? What right have they or we to attribute to others moods and motives, which we reprove severely in our children, but which it is the privilege and duty, as it is one of the highest aims and achievements, of manhood to have entirely outgrown. This is, indeed, an unjust argument. The youth who, in the manly sports of the gymnasium or foot-ball field, resorts to unfair means or cherishes ill-will as the result of the game is summarily voted to be no gentleman, and we readily believe that public sentiment among our young men is in so healthy a condition as to pass a similar verdict upon any man pursuing an analogous line of conduct in college competitions.

Many argue that on these and similar grounds, all competition should be excluded from university examinations, although, as we have shown, the reasons urged are still debatable. Competition in the abstract is a great fact. What indeed, to go no further, is the symbolical meaning of every sport in which children and youth engage? Without exception, competition is involved, and they are evidently a rehearsal in miniature of the great drama of life which is to follow. There is nothing more inevitable under the sun than the competition which is to confront our young men when they leave the college halls. Society is so constituted that in every walk of life men are brought into a contest where the prizes are few and the strife is keen. Nor is this wholly or even mainly an evil; it brings out much that is strongest and best in our natures. Therefore, we would go so far as to say that well regulated competition in college, is salutary, just as it is in the world, and that, just because it is in the world, our young men should have some preliminary notion of con-

tests which involve far greater issues.

Some persons, on the other hand, doubt the right of Government to apply public funds to the purpose of helping those who are willing to help themselves. There is no one who is at all familiar with these matters but knows that this is what the awarding of scholarships amounts to. It is notorious that scholarships do not go to those whose advantages have been superior. One intention of the system is to put in the way of the poorer student an opportunity at least of gaining, by effort and industry, a sum of money which will enable him to pursue his studies without interruption. It is only a slightly further and special extension of our system of free education. Beyond a doubt the nation gains more indirectly than the direct outlay of money. The strength of this argument lies in the fact that the ranks of our eminent men are largely, we might say chiefly, recruited from the mass of poor students. The necessity for thus putting an opportunity within the reach of struggling merit is frankly admitted even by the opponents of the present system, some of whom propose other methods of aid; for example, scholarships for those who declare themselves too poor to continue their studies, or a system of loaning money to students with subsequent repayment. The fatal and evident objection to these methods is that the former at one step pauperizes the student, and the latter obliges him to assume an obligation which any young man of honour and prudence might well hesitate to undertake.

As far as the question affects our Provincial University, it appears that the Senate is in favour of scholarships, at least in principle. This is shown by the fact that the money formerly given at Senior Matriculation has been turned over for a similar purpose to Junior Matriculation. We are pre-

pared to endorse the action of the Senate in this. Any action so radical as the abolition of a part of our university system which has been in operation from the first, and the usefulness of which has been patent to so many of our ablest and most experienced men—numbers of whom have declared themselves deeply indebted at a critical time in their college course to that very system—should be undertaken with extreme caution; and if the Senate is to determine to use the money for other purposes it must only be after deciding that the other objects are better, and then only after a thorough estimate of what are likely to be the practical effects of such a course of action.

It has been freely stated by some

in speaking of this question that, so long as the scholarship system or any part of it exists, the Provincial University will apply in vain for State aid. We cannot think that the Legislature is prepared to discriminate against any particular part of the administration of university affairs by the Senate, nor do we think that the Parliament of the Province has ever given the public to understand that its members are prepared to look at the matter in any such narrow spirit. It is more than likely that any reason for this assertion at the present juncture does not exist beyond the imagination of those who make it, and in any case it is difficult to understand the propriety of individuals speaking for the Legislature.

SCHOOL WORK.

MATHEMATICS.

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

SOLUTIONS TO QUESTIONS IN APRIL NUMBER.

By George Ross, B.A., Math. Master, Galt
Coll. Inst.

22. Prove the following construction for inscribing a pentagon in a given circle whose centre is C with an angular point at a given point A . Divide AC in the point D so that the rectangle AC, AD shall be equal to the square on CD ; and divide AC produced in E so that the rectangle CD, CE shall be equal to the square on AC ; then the circles described with centres D and E and radius AC shall meet the given circle in the four remaining angular points of the pentagon.

23. Assuming that the rectangle contained by the diagonals of a quadrilateral figure inscribed in a circle is equal to the sum of the

rectangles contained by its opposite sides, deduce that

$$(1) \sin(a + \beta) = \sin a \cos \beta + \cos a \sin \beta$$

$$(2) \sin(a + \beta) \sin(\beta + \gamma) = \sin a \sin \gamma + \sin \beta \sin(a + \beta + \gamma).$$

24. Prove that for n angles $\alpha, \beta, \gamma, \delta,$

$$(1) \sum \sin(\alpha \pm \beta \pm \gamma \pm \delta \dots) = 2^{n-1} \sin \alpha \cos \beta \cos \gamma \cos \delta \dots$$

$$(2) \sum \cos(\alpha \pm \beta \pm \gamma \pm \delta \dots) = 2^{n-1} \cos \alpha \cos \beta \cos \gamma \cos \delta \dots$$

where \sum implies a summation extending to all possible arrangements of the signs indicated by the \pm ambiguities.

25. A uniform circular disk, of weight nW has a heavy particle of weight W attached to a point on its rim. If the disk be suspended from a point A on its rim, B is the lowest point; and if it be suspended from B , A is the lowest point. Show that the angle subtended by AB at the centre is $2 \sec^{-1} 2(n+1)$.

26. A cylinder rests in equilibrium with the centre of its base on the highest point of

a fixed and perfectly rough sphere. The altitude and diameter of the base of the cylinder are each equal in length to a quadrant of a great circle of the sphere. Find the greatest angle through which the cylinder may rock without falling off.

27. Show that, if $2^n - 1$ be a prime, the sum of the divisors of the number $2^{n-1}(2^n - 1)$ will be equal to twice the number.

28. Prove that the roots of the cubic equation $x^3 - 3ax^2 + 3bx - c = 0$ are $a + p + q$, $a + pw + qw^2$, $a + pw^2 + qw$ where w is an imaginary cube root of unity, and p and q are given by the equations :

$$pq = a^2 - b$$

$$p^3 + q^3 = 2a^3 - 3ab + c.$$

Prove that the roots may also be expressed in the form :

$$\frac{r-s}{p-q}, \frac{r-s w}{p-q w}, \frac{r-s w^2}{p-q w^2}$$

where $r = ap - q^2$, $s = aq - p^2$.

MODERN LANGUAGES.

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

EXERCISES IN ENGLISH.

1. Give the grammatical value and relation of the infinitive phrases in the following.

- (a) I am very sorry to hear such reports.
- (b) She offered to show me the list.
- (c) He waited to see the papers.
- (d) I have no desire to hear the particulars.

- (e) It is difficult to answer that question.
- (f) To make sure, he counted them twice.

2. Contract the following sentences into simple ones.

- (a) His face haunts me wherever I go.
- (b) If he perseveres he will probably succeed.
- (c) There was great danger that they might break forth into open rebellion.
- (d) He feared that such a result might happen, and therefore had sent for assistance.
- (e) It was not till the following day that he discovered that he had made the mistake.
- (f) As they knew from the deserters how

weak the defenders were, they had no doubt that they should be able to capture the fort.

3. Break each of the following complex sentences into a series of simple ones.

(a) While Randolph was considering what to do, there came to him a gentleman, named Francis, who told him that at one time he had lived in the castle, of which his father had then been keeper.

(b) With this ship he succeeded in capturing a vessel in which were a number of rebels who had intended to make a descent on the island, and brought them prisoners into the very harbour which they had expected to enter as conquerors.

4. Divide the following sentences into clauses, supplying the necessary ellipsis, and tell the kind and relation of each clause.

(a) Regions Cæsar never knew.

Thy posterity shall sway.

Where his eagles never flew.

None invincible as they.

(b) Thrice is he armed that bath his quarrel just ;

And he but naked, though locked up in steel,
Whose conscience with injustice is corrupted.

5. Analyze, and parse underlined words.

(a) *On the 19th of September, 1535, Cartier, leaving his two larger vessels well protected in the harbour of St. Croix, commenced his voyage up the river with his pinnace and two long boats, capable of holding thirty-five persons.*

(b) *In 1669 a company formed in London, under the direction of Prince Rupert, obtained a charter from Charles II., granting to them and their successors, the sole right of trading in all the country watered by the rivers flowing into Hudson Bay.*

(c) *Now fades the glimmering landscape on the sight,*

And all the air a solemn stillness holds.

6. Change the voice of the finite verbs in the following.

(a) None of the speakers made any reference to it.

(b) You will probably be called on to address the meeting.

(c) The matter must be looked into without delay.

(d) Some one may have given him a hint of it.

(e) He gave the magistrate the papers that was found in the prisoner's possession.

In the lesson, "Marmion and Douglas," (Fourth Reader) express in your own words, changing to indirect narrative, the meaning of lines 11 to 29.

8. In the lesson, "Boadicea."

(a) Substitute words or expressions of equivalent meaning for mien, counsel, hoary, matchless, her pride shall kiss the ground, heedless of a soldier's name, progeny, sway, where his eagles never flew, pregnant with celestial fire.

(b) Explain what is referred to in the following :

The Roman *rods*, beneath the *oak*, the Gaul is at her gates, *harmony*, the path to fame, armed with *thunder*, clad with *wings*, his *eagles*.

9. Punctuate, capitalize and divide into three paragraphs.

In the arctic ocean midway between lapland and the north pole lies the group of islands known by the name of spitzbergen they were discovered in 1596 by the dutch navigator william barentz in the course of an attempt to accomplish a passage to india by the arctic seas at the extreme north of spitzbergen proper is a cluster of small islands called the seven sisters these islands are the most northern land on the globe yet reached by man they lie within 600 miles of the pole the western coasts of spitzbergen were long the main seat of the whale fishery and were frequented every year by vessels from england holland and france till the whales retreating from their mighty destroyers sought refuge in the greenland seas.

10. Give (a) the third singular of each tense of the indicative mood of *forget*, *forgive*, *forbid*, *forsee*, *forbear*.

(b) the possessive singular and plural of alderman, Hindoo, calf, turkey, mother-in-law.

(c) the plural of grief, half, Mary, series, buffalo, proviso, valley, alkali, bean.

11. Give examples (a) of noun clauses be-

ginning with *who*, *what*, *why*, *where* and *whether*.

(b) of an infinitive phrase used as a subject, an attributive adjunct, a direct object, an adverbial adjunct.

12. Define or explain the terms, case, strong verb, phrase, parsing.

13. Correct the spelling of the following :—truely, beleive, doessent, messers, independant, untill, buisness, Glascow, Sweeden, preceeding, guage, professors, comittee, discribe, Edinborough.

14 Indicate as far as possible the correct pronunciation of Asia, Arabic, archives, aisle, away, aye. (2) bade, bitumen, bestial, æsthetic, antique, ominous, resonant, Pentateuch, Norwich.

15. What words are pronounced like the following? Give the meaning of each, raise, skull, climb, fane, faint, peel, ring, plain, rain.

16. Point out any misused words in the following, and substitute a proper word in each case.

(a) He took a mighty long time to go for it.

(b) He threw a couple of stones at us.

(c) She looks some better this evening.

(d) They live in a different portion of the town now.

(e) Ere many hours had transpired he repented of his bargain.

17. Which is correct?

(a) How sweet (sweetly) those roses smell.

(b) She will be very angry at (with) you.

(c) They live in (on) East Street.

(d) There isn't (aren't) more than another copy left.

(e) Ch in Christmas has (have) the sound of k.

18. Distinguish.

(a) If I have it I will give it to you (had it, would give).

(b) To persuade (convince) a man.

(c) The third and last volume—The third and the last.

(d) You will (shall) be sorry for this.

(e) It consists of (in).

(f) Elected by a plurality, by a majority.

19. Correct any errors in the following, giving your reasons.

- (a) Nearly every one of the boys brought their dinner to-day.
 (b) All I have got to say is that I will be greatly surprised if he don't pass.
 (c) Why wasn't you at school to-day?
 (d) If it wasn't so far I would have went with him.
 (e) He jumped on to the sleigh and drove of at full speed.
 (f) He lives as far if not further from the school than you do.
 (g) He wasn't a boy whom any of us thought would do such a thing.
 (h) I only need three more to complete the list.
 (i) Neither he nor any one else have any right to touch it.
 (j) You can take all that ain't marked.
 (k) He told us that he expected to have found them here.
 (l) Nobody but girls like Mary and she would have left their books laying in such a place.

CLASSICS.

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

UNIVERSITY OF TORONTO.

ANNUAL EXAMINATIONS, 1885.

Junior Matriculation.

LATIN GRAMMAR.

Examiner: W. S. Milner, B.A.

1. Decline together: major vis, quidam metus, turpe scelus, nullus civis.
2. Compare: creber, noxius, parvus, vetus, maledicus, breviter, facile.
3. Give the genitive singular and plural, and the gender of: merces, sedile, jugerum, robur, pulvis, plebs, voluptas, nex, ficus, cor.
4. What are the uses of distributive numerals? Give examples.
5. Write out the singular of the future indicative, and of the imperfect subjunctive active of: nolo, pereo, prosum.
6. Give the principal parts of: morior, verŕo, tundo, dedo, allicio, juvo, aufero. audeo.
7. Give rules for expressing in Latin, "motion to a place," and "motion from a place," in poetry and in prose.

8. What construction follows: licet, miseret, jubeo, parco, abripŕo, avidus, peritus, ignarus, similis, quamquam?

9. Translate and explain fully the syntax of the words in italics in the following:

- (1) manet alta mente repostum, iudicium *Paridis*, spretaeque injuria *formae*,
- (2) *mene incepto*, *desistere* victam.
- (3) *ŕopulis pendentibus* antrum.
- (4) *suici* -cintillam exemit Achates.
- (5) lacrimis *oculos* suffusa nitentes.
- (6) quid quoque die *dixerim*, *audierim*, *egerim*, commemoro *vesperi*.
- (7) haec habui de senectute quae *dicerem*.
- (8) semper enim in his studiis laboribusque *viventi*.
non intelligitur quando *obrepit* senectus.

10. Translate into Latin:

- (1) I fear that he will not be believed.
- (2) He told me that he had been taught Greek by his father.
- (3) I sent one of my slaves to ask him what he had said.
- (4) There was no one at Rome of greater honesty.

LATIN.

Examiner: Geo. H. Robinson, M.A.

I.

Translate:
 Omnium aetatum certus. . . . et statione vitae decedere.

CICERO, *Cato Major*.

1. Parse *vivitur*, *possis*, *obsisteret*, *destruit*, *divellitur*.
2. Derive *terminus*, *ŕntegra*, *coagmentavit*, *ita*, *nec*.
3. Mark the penult of *munus*, *exsequi*, *fretus*, *recens*, *senibus*.
- (4) Distinguish *omnis*, *universus*; *terminus*, *finis*; *fortis*, *audax*; *quaero*, *interrogo*; *mens*, *animus*.

II.

Translate:
Aeneas scopulum interea. . . . pectora mulcet. VIRGIL. *Aeneid*.

1. Point out any grammatical peculiarities in the words *puppibus*, *nullam*, *arcum*, *abeuntibus*, *heros*.

2. Explain all subjunctives in the extract.
3. Scan the first three verses, marking all quantities.
4. Define and point out any examples of anachronism, hypallage, metaphor.

III.

Translate :

Finierat monitus . . . ab Jove pulsus erat.

OVID, *Fasti* I. v. 227.

1. Derive *clavigerum*, *biceps*, *rursus*, *cur*, *falcifer*.

2. *Didici*, *veni*, Compare these perfects as to formation.

3. Write brief explanatory notes on *navalis forma*, *forma biceps*, *falcifer deus*, *hac tellure*, *caelitus regnis*.

4. What is the use of prepositions in an inflected language? Briefly illustrate from this passage.

Arts and Medicine.

LATIN PROSE.

Examiner : J. E. Hodgson, M.A.

N.B.—Pass candidates will take I. only. Honor candidates will take I. and II.

I.

1. It is of great importance to your parents and yourself that you should be diligent.

2. Cicero is said to have been the most distinguished of all Roman orators.

3. Even if I had known his design to murder his opponent, I could not have prevented him.

4. Granting that the cause of the war had been a just one, still the general ought not to have acted as he did, without the authority of the Senate.

5. After the battle of Cannae, when his troops were congratulating Hannibal, and advising him to take some rest himself, and give some to his weary troops, one of his officers, by name Maharbal, urged him to start for Rome at once, since he was sure to feast in the Capitol as victor within five days. When Hannibal rejected his advice, Maharbal said: "You know how to conquer, Hannibal, but you do not know how to use victory."

II.

In those days Darius, King of the Persians, had decided to transport his army from Asia into Europe, and make war on the Scythians. He accordingly bridged the river Danube so as to lead his troops across. He left in charge of the bridge in his absence, princes whom he had brought with him from Ionia and Aeolis, to each of whom he had given the complete control of his city, thinking that he would most easily retain in his power the Greek-speaking inhabitants of Asia, by entrusting the control of towns to friends who would have no hope of safety if he were crushed. Among the number to whom that trust had been allotted was Miltiades, who, when frequent messengers reported that Darius was not meeting with success, and was hard pressed by the Scythians, urged the guardians of the bridge not to throw away the fortune-offered opportunity of freeing Greece.

SCIENCE.

H. B. SPOTTON, Editor, Barrie.

UNIVERSITY OF LONDON.

MATRICULATION EXAMINATION, 1885.

Natural Philosophy.

Examiners—Prof. G. Carey Foster, B.A., F.R.S., Prof. A. W. Reinold, M.A., F.R.S.

Only eight questions are to be answered, of which at least two must be selected from Section A.

A.

1. If a body, acted on by several forces, move in a straight line with uniform velocity, what condition must the forces satisfy?

2. How would you experimentally illustrate the "parallelogram of forces"?

A force equal to the weight of 20 pounds, acting vertically upwards, is resolved into two forces, one of which is horizontal and equal to the weight of 10 pounds. What is the magnitude and direction of the other component?

3. A man carries a bundle at the end of a stick over his shoulder. If the distance

between the hand and the bundle be kept constant, and the distance between the hand and the shoulder be changed, how does the force on his shoulder change?

4. Weights of 5, 6, 9 and 7 pounds respectively are hung from the corners of a horizontal square, 27 inches in the side; find, by taking moments about two adjacent edges of the square, the point where a single force must be applied to the square to balance the effect of the forces at the corners.

5. What is meant in mechanics by "acceleration"?

A mass of 19 pounds and a mass of 5 pounds are connected by a string which passes over a pulley at the edge of a horizontal table, so that the smaller mass hangs vertically, and, by its weight, pulls the larger mass along the table.

Determine the acceleration, friction being neglected.

6. Explain how to use Atwood's machine to show—

(1) That a body acted on by a constant force moves with uniform acceleration;

(2) That the acceleration of a given mass is proportional to the force which acts upon it.

7. While a railway train travels $\frac{1}{2}$ a mile on a level line, its speed increases uniformly from 15 miles an hour to 30 miles an hour; show what proportion the pull of the engine bears to the weight of the train—neglect friction.

B.

8. A piece of iron, weighing 275 grammes, floats in mercury of density 13.59 with $\frac{2}{3}$ of its volume immersed; determine the volume and density of the iron.

9. A piece of glass weighs 47 grammes in air, 22 grammes in water, and 25.8 grammes in alcohol; find the specific gravity of the alcohol, and state the general principle on which the solution of the problem depends.

Describe some form of condensing air-pump. If the capacity of the barrel of the pump be 80 cub. cm., and the capacity of the receiver 1,000 cub. cm., how many

strokes will be requisite to raise the pressure of the air in the receiver from one atmosphere to four atmospheres?

11. What is meant by saying that the refractive index of water with respect to air is $\frac{4}{3}$?

If the refractive index of water with respect to oil of turpentine be $\frac{7}{5}$, show how to find the refractive index of oil of turpentine with respect to air.

12. A candle is placed at a fixed distance opposite a wall. A convex lens held between the candle and the wall, throws on the wall a well-defined magnified image of the candle-flame when it is one foot from the candle, and a well-defined diminished image when it is eleven feet from the candle. Find the focal length of the lens.

13. 200 cub. cm. of water at 99° C. are mixed with 200 cub. cm. of milk of density 1.03 at 15° C., contained in a copper vessel of thermal capacity equal to that of 8 grammes of water, and the temperature of the mixture is 57° C. If all the heat lost by the water is gained by the milk and the copper, what is the specific heat of the milk?

14. A glass flask contains, when full at 9° C., 100 cub. cm. of mercury. The coefficient of cubical expansion of glass being 0.000026, and that of mercury 0.000018, find the volume at 100° C. of the mercury driven out when the flask and mercury are heated to 100°.

15. Three separate mixtures are made, namely:—

(1) Water and snow.

(2) Water and salt.

(3) Snow and salt.

If all the materials were, before being mixed, at 0° C., which mixture will be at the highest temperature, and which at the lowest, and why?

16. A glass bottle and a bottle of porous earthenware are both filled with water and exposed to the air side by side. Usually, the water in the earthenware bottle becomes decidedly colder than that in the glass, why is this? If there is little or no difference of temperature, what conclusion may we draw as to the state of the atmosphere? and why?

Chemistry.

Examiners—Prof. J. Emerson Reynolds, M.D., F.R.S., Prof. T. E. Thorpe, Ph.D., F.R.S.

1. How is ammonia gas prepared? How can it be shown that it is composed of hydrogen and nitrogen? Explain what happens when a stream of chlorine gas is passed through an aqueous solution of ammonia.

2. State the average composition of atmospheric air. What evidence would you cite in support of the statement that air is a gaseous mixture? How do you explain the apparent constancy in composition of air?

3. What volume of carbon dioxide at 0° and 760 mm. can be obtained from ten grammes of pure marble? What changes occur when the pure gas is passed (a) into lime water; (b) over heated metallic sodium; (c) over red-hot charcoal? $Ca=40$.

4. How may phosphorus be procured from bones? If the weight of the human skeleton be taken as 25 pounds, and $\frac{3}{8}$ of that weight be tricalcic phosphate ($Ca_3 P_2 O_8$), calculate the amount of phosphorus which is contained in the human frame. $Ca=40$.

5. Explain what is meant by the *basicity* of an acid.

6. How would you distinguish (1) between nitrous oxide and nitric oxide; (2) between hydrogen and marsh gas; (3) between hydrochloric acid gas and hydrobromic acid gas; (4) between carbon monoxide and carbon dioxide?

THE CLASS-ROOM.

DAVID BOYLE, Editor, Toronto.

NOTES ON FOURTH BOOK LESSONS FOR ENTRANCE EXAMINATION, JUNE, 1886.

BOADICEA.

Warrior-queen. Boadicea led her army in person.

The oak . . . the Druid. The Druids were the British priests, who were supposed to possess mystical powers of prophecy. The oak was considered sacred and mistletoe, cut

from it amid great solemnities by the Druids, was supposed to have a magic power over sickness.

Resentment . . . tongues. Our anger is too great for expression.

A thousand states. The definite number "a thousand" is placed for the indefinite "very many." Rome ruled the then known world.

The Gaul . . . gates. Rome suffered greatly from invasions by the Gauls.

Other Romans. The modern Italians, who have been famed for their music, but have had no distinction in war.

Armed with thunder, i.e., cannon.

Wings. Sails.

A wider world. The British Empire is larger than the Roman Empire ever was.

Cæsar. The name given to the Roman Emperors.

Thy posterity. As Boadicea was a British queen the *English* race can hardly be called her posterity, except for the fact that they inhabit her country.

His eagles. The Roman standard.

Died. Boadicea is said to have poisoned herself.

See note in the Reader for remarks on Cowper, also on Boadicea.

THE TRUANT.

He had dwelt . . . Eden. Labour has been the lot of man ever since the fall.

Ingenuous. Open, candid.

People say . . . more disagreeable. Alluding to the common supposition that manual labour is more severe than mental.

ARITHMETICAL PROBLEMS.

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

1. Distinguish between

(a) Abstract and concrete numbers.

(b) Prime and composite numbers.

(c) Measure and multiple.

2. (a) The product of two numbers is 20,352, one-third of one of them is 64. Find the sum of the two numbers.

(b) The product of four consecutive numbers is 43,680. Find them.

Ans. (a) 298; (b) 13, 14, 15, 16.

3. The apples in a barrel can be exactly divided into groups of 13, but when divided into groups of 14, 16 or 20, 12 apples remain in each case. How many apples are there in the barrel?

Ans. 572.

4. At 6.30 o'clock Monday morning, a man begins a journey of 71 miles, 4 fur. 29 per. $1\frac{1}{2}$ ft. His uniform rate per hour is 2 miles, 5 fur. 8 per. 2 yds. 2 ft. How many hours can he afford to rest on the way and yet reach his destination at 12.30 p.m. Tue day?

Ans. 3 hours.

5. A., B. and C. spend \$162, \$297 and \$351 respectively, in buying cattle at the same rate per head. How many head did they purchase?

Ans. 30.

6. A card-receiver weighs 3lbs. $2\frac{3}{4}$ oz. avoird. : If the composition from which it is made be worth 48 cents per oz. troy, find the value of the card-receiver.

Ans. \$35.

7. A. can do a piece of work 16 days, B. in 20 days and C. in 24 days. After working together for 4 days, they call in the assistance of a boy, and the work is completed in $2\frac{3}{4}$ days. If the boy be paid \$2.30 for his share, find how much the whole work was worth.

Ans. \$33.75

8. A. B. C. buy oats at 35 cents per bushel. Barley at 55 cents, and Wheat at \$1 respectively, spending in all \$77. A gets 2 bushels of oats to every 3 bushels of barley B. gets, and every $1\frac{1}{2}$ bushels of wheat C. gets. How many bushels of grain did they buy altogether?

Ans. 130.

9. The distance round a rectangular room is 70 ft. The length of the room exceeds its breadth by 5 ft. Find the cost of covering the floor with carpet 30 in. wide, at \$1.50 per yard.

Ans. \$60.

10. A rectangular lot which is 121 ft. wide, contains $\frac{2}{5}$ of an acre. Find the expense necessary to fence this lot at 99 cents per rod.

Ans. \$43.23.

EAST MIDDLESEX PROMOTION
EXAMINATION.

NOVEMBER, 1885.

SPELLING—3RD TO 4TH CLASS.

Value, 87 marks; for every error in spelling, 3 off; in capitals and apostrophes, 2 off; in punctuation, 1 off. Dictate the punctuation marks.

1. He knew not that the chieftain lay unconscious of his son.

2. While o'er lim fast, through sail and shroud, the wreathing fires made way.

3. The wretched parents, all that night,
Went shouting far and wide;
But there was neither sound nor sight
To serve them for a guide.

4. The poor little match-girl was still in the corner of the street in the cold New Year's morning. She was frozen to death and a bundle of burnt matches lay beside her. Peop'e said "She has been trying to warm herself." But ah, they knew not what glorious things she had seen.

5. She taught me to lisp my earliest prayer
As I knelt beside that old arm-chair.

6. There is not a breath, the blue wave to curl.

7. Colder and louder blew the wind,
A gale from the north-east;
The snow fell hissing on the brine,
And the billows frothed like yeast.

8. John Gilpin was a citizen
Of credit and renown,
A train-band captain eke was he
Of famous London town.

John Gilpin's spouse said to her dear
"Though wadded we have been,
These thrice ten tedious years, yet we
No holiday have seen."

9. The names of the days of the week are Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday.

10. The winter months are January, February and March.

11. We are examined in reading, writing, arithmetic, grammar, geography and composition.

DRAWING.

Time, $1\frac{1}{2}$ hours.

1. Draw a six inch rule one inch wide. Mark on it the inches, half-inches and quarter-inches. *Do not use the ruler.* [12.]

2. Take a piece of paper 9 inches or a foot long; fold it into a strip 1 inch wide; tie a single knot in the paper and then make a drawing of it. The teacher may show how to fold the paper and tie it in a knot. [12.]

3. Draw from memory an oblong box stove. Show the top, front door and damper. [12.]

4. Draw from memory any two kinds of leaves. Write the kind of leaf under each. [12.]

5. On a scale of a half inch to the foot draw the floor of a room 10 ft. by 13 ft. Off the end of the room take a closet 3 ft. by 5 ft. Mark the strips of carpet 30 in. wide running the length of the room required to cover the remainder. Use the ruler, make the drawing very exact. [24.]

Count 60 marks a full paper.

ARITHMETIC—3RD TO 4TH CLASS.

Time, 3 hours.

Limit of Work.—Practical applications of the four simple rules continued. Factoring continued. Reduction and the compound rules. Cancellation. Measures and multiples.

1. (a) When you are given the product and multiplier how do you find the multiplicand? [4.]

(b) When you have the quotient, divisor and remainder how do you find the dividend? [4.]

(c) When you know how much all the articles together cost, and the number of articles, how do you find the price of one article? [4.]

NOTE.—Full marks are not to be allowed for (a), (b) and (c), unless the answers are given in complete sentences.

(d) The quotient is 29, the dividend is 141,578, the remainder is five times as much as the quotient; find the divisor. [8.]

2. Reduce (a) 98 dys., 0 sec., 168 hrs., 0 min., to weeks. [6.]

(b) 34,864 sq. rods of land to sq. ft. [6.]

3. Add 27,509 yards of wire, 5,812 rods, 899 feet, 108 inches, 54 miles. Give the answer in feet. Put all the work on the paper. [15.]

4. (a) How many paper bags, each to con-

tain 11 lbs. 4 oz. (\$1.00's worth), can be filled from a ton of sugar? [6.]

(b) A grain bin 9 ft. long and 4 ft. wide contains by measurement 150 bushels of oats. How many bags, each to hold on an average 2 bush., 3 gal., 3 qts., can be filled from the contents of the bin? [7.]

5. A lady purchased 14 yds. 27 in. of silk, at \$2.40 per yard, a fur cloak, costing eighty cents less than twice as much as the silk, and groceries amounting to \$14.60. Find the total cost of her purchases. [12.]

6. Make a bill of the following items. Use your ruler in drawing the lines needed for the bill:

Mrs. F. L. Woodcamp bought of Messrs. Anderson & Co., 5th Sept.—3 lbs. 2 oz. tea at 64 cents per lb.; 5 lbs. 4 oz. lard at 12 cents per lb. 19th Sept.—3 quarts syrup at 60 cents per gal.; 25 lbs. rice at \$4.50 per cwt. 3rd Oct.—18 herrings at 25 cents per dozen; 5½ lbs. of sugar at 11 lbs. for \$1. [25.]

3 marks for the correct work of each item put on paper and denominations all written. 1 mark for correct amount without the work. 2 marks for correct entry and addition of the items, and 5 marks for a neat and correct form of bill.

7. Find the value of a pile of four foot cord wood 68 ft. long, 7 ft. high; 9 cords are bargained for at \$4.50 per cord, and the remainder at \$4.40 per cord. [15.]

8 Find the cost of carpeting with tapestry 27 in. wide at 85 cents per yard, a room 21 ft. 6 in. long, and 13 ft. 4 in. wide. Will six strips of carpet the length of the room have to be bought? [15.]

9. Find the amount of 2,275 lbs. of wheat at 76 cents per bush., and 2,380 lbs. of wheat at \$1.30 per cwt. [15.]

A maximum of 10 marks for neatness and style of work may be allowed on this paper; exclusive of these require 25 marks as a minimum for promotion. Count 120 marks a full paper.

READING—3RD TO 4TH CLASS.

50 Marks.

Old Third Reader, p. 274 (New Third Reader, p. 267), "Well, friend Midas 'to 'mortals sigh and struggle after.'"

For reading this extract with correct pronunciation, with a fair degree of fluency, with attention to the marked pauses, but without spirited appreciation and without proper inflection and emphasis, give not more than 25 marks.

After all have read, direct them, with open books before them, to write the meaning of :

- (1) *Observed* the stranger, (2) Your own heart has not been changed from flesh to gold, (3) the commonest things, (4) more valuable than riches, (5) which mortals sigh after.

For each phrase wrongly interpreted deduct two marks from the value already assigned for reading.

WRITING—2ND TO 3RD, AND 3RD TO 4TH.
50 Marks.

Copy from Readers the first two stanzas of "Good night and good morning," p. 127, p. 105 (8 marks); or, the first stanza of "Bingen on the Rhine," p. 284, p. 207; or, the stanza of "The Ocean," "Roll on—— unknown," p. 252, p. 247.

All the small letters, repeated three times, joined, in ruled spaces. (8 marks.)

All the capitals. (5 marks.)

The ten digits, repeated ten times, as for a sum in addition making a square. (5 marks.)

The other 25 marks to be judged from the compositions in Class II. and Class III.

GRAMMAR—3RD TO 4TH CLASS.

Time, 2½ hours.

Limit of work.—Parts of speech. Inflections. Analysis of simple sentences as far as subject, enlargements of subject, verb, objective complements, adverbial complements. Correction of errors. Definition should always succeed accurate knowledge of the thing defined.

1. "Will he help me to do the work?" Write one sentence making four changes in the foregoing sentence as follows:

- (a) The interrogative changed into the affirmative. [2.]
- (b) "me" changed into the nominative plural. [2.]

(c) "he" changed into the objective plural. [2.]

(d) "will help" changed into the past indicative passive. [2]

2. "That is a man whom I respect."

(a) Why do you call "that" a pronoun, and "whom" and "I"? [6.]

(b) Why do you parse "whom" a relative pronoun? [5.]

(c) State clearly why you say "man" is the predicate nominative. [4.]

(d) Show why "respect" is a transitive verb. [4.]

3. Make a table of masculines in one column and corresponding feminines in another, using the following words as one of each pair: husband, aunt, niece, duke, lion, ewe. [9.]

4. Why is it incorrect to say—

(a) Try both these pens and then use the best one of the two.

(b) Jumbo was bigger than any elephant in the world. [8.]

5. Why is "He ain't sure" more incorrect than "I ain't sure." [4.]

6 Select the correct word from the following pairs, and give the reason for the selection in every case:

Him	and James	saw	Tom and	me
He		seen		I
	laying		on the bench.	[16.]
	lying			

(One mark for the word and three for the reason.)

7. Analyze :

(a) The skipper had taken his little daughter to bear him company.

(b) Blue were her eyes.

(c) Last night the moon had a golden ring.

(d) To-night no moon we see!

(e) The skipper he blew a whiff from his pipe.

(f) And a scornful laugh laughed he.

(g) And fast through the midnight dark and drear,

Through the whistling sleet and snow
Like a sheeted ghost, the vessel swept
Toward the reef of Norman's Woe.

[28.]

(Two marks for correct division of each sentence into noun-part and verb-part, four

marks for correct analysis according to the scheme.)

8. Parse:—To-night no moon we see. [15.]

(Count 100 marks a full paper.)

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GEOGRAPHY—3RD TO 4TH CLASS.

Time, 2 hours.

Limit of work.—SECOND CLASS.—Local geography; map of the school grounds. Definitions of the chief divisions of land and water. Talks and stories about animals, plants, peoples, air, sun, moon and shape of the earth. Pointing out oceans and continents on the Map of the World.

THIRD CLASS.—Definitions continued; first accurate knowledge, *then* the memorizing of the definition. The great countries, large cities and most prominent physical features on the Map of the World. Maps of the County of Middlesex, Ontario, Canada, America. Map drawing. Motions of the earth, seasons, zones.

1. What is a boundary line? Mention a mountain range that forms part of the boundary of a country; also a boundary river. State first the country, then the side bounded, then the boundary. [9.]

2. Give a descriptive tracing of the boundary of Middlesex, commencing at Belmont and going west, naming each township of Middlesex as you pass it. Example, "Starting from near Belmont we proceed west along the boundary-line between Westmin-

ster and Delaware on the north and Elgin County on the south until we come to the River Thames. The river flows between Caradoc, etc." Continue in this way until you come round to Belmont again. The composition of the answer will be considered in valuing it. [15.]

3. Draw a map of that part of Middlesex which has for its corners Parkhill, Lucan, London and Strathroy. Mark the railways, railway stations, and township boundaries contained in the part. Commencing at Parkhill draw the portion of the Grand Trunk from that village to Lucan, two inches long on your map. [15.]

4. Name in order the counties with their county towns that border on the county of Huron. [10.]

5. What and where are Toronto, Nipissing, Pelee, Brant, Muskoka and Fundy? [12.]

6. Commencing at the Pacific coast name in order the Provinces of Canada, their capitals and the situation of each capital. Put this answer in a ruled table, or draw a map and show the required information upon it. Six marks extra for a good outline map. [14.]

7. What and where are Liverpool, Paris, Alps, Caspian, Hindostan and Chili? [12.]

8. Tell why it is warmer here in summer than in winter. Or, why it is hotter in New Zealand at Christmas than on the 1st of July. [6.]

(Count 80 marks a full paper.)

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CONTEMPORARY LITERATURE.

A LAYMAN'S STUDY OF THE ENGLISH BIBLE. By Professor Francis Bowen. New York: Charles Scribner's Sons. \$1.

The point of view of the author is somewhat unique, inasmuch as the Bible is here treated as an English Classic, containing poetry, philosophy, history and moral teaching. Prof. Bowen writes in a candid, appreciative and loving spirit. We think the book a most valuable one, and as such commend it to our readers.

BACON'S ESSAYS. Edited by F. Storr, B.A., and C. H. Gibson, M.A. London: Rivingtons.

Enriched with an Introduction, Notes, Annotations and Indexes, this edition of the Essays can hardly fail to be welcomed by students of English literature, for its completeness and for many other good points, especially the accurate and scholarly manner in which the life, philosophy and contemporary history of Bacon are treated.

SHAKESPEARE'S TRAGEDY OF HAMLET. Edited by Dr. Sprague, President of Mills College. Chicago: S. R. Winchell. 45cts.

The editor, formerly head master of the Girls' High School, Boston, has specially remembered the wants of students in preparing this book, which contains all that a student needs—indeed, we are compelled to say that there is here much more than most students will make any good use of. Critical comments, topics for essays, examination papers, etc., add to the value of the book.

ANECDOTES NOUVELLES. Lectures faciles et amusantes. New York: The Writers' Publishing Co. 20cts.

An improvement on most elementary French readers in that the translator will be in sympathy with the point of the anecdotes, most of which are well chosen, some having a decidedly new-world flavour.

LANGUAGE LESSONS IN ARITHMETIC. By Miss Barton, Principal of the Portland School for the Deaf. Boston: Ginn, Heath & Co. 85cts.

An interesting and novel work, designed to aid in training young pupils to express their thoughts in arithmetical language. Teachers of primary classes will find here a goodly number of little problems.

WENTWORTH'S SERIES OF MATHEMATICS. *Ibid.*

- I. Wentworth & Reed's First Steps in Number. Pupil's Edition, 30cts.
- II. Wentworth's Grammar School Arithmetic. 75cts.
- III. Wentworth's Shorter Course in Algebra. \$1.

We observe from the publishers' announcement that this series has met with marked success. The "First Steps" and the "Grammar School Arithmetic," have just been issued, and will no doubt meet with like favour. We have already spoken favourably of the "Elements of Algebra," of which the "Shorter Course" is a condensation, more suitable in some respects, for class-work, than the larger book.

Appleton's Science Text-Books.

APPLIED GEOLOGY. Prof. Williams, of Cornell University. New York: D. Appleton & Co.

It is somewhat remarkable that this book is the first which has attempted to give a comprehensive view of the relation of geology to agriculture, to lighting, heating, draining, etc., and to manufacturing and other industries. It concludes with an interesting chapter on "Precious Stones and Gems." We think those who are in charge of School Libraries will find it well worth their attention,

LONGMAN'S NEW READERS. First and Second Primers. Infant Readers. Standards I. II. and III. London: Longmans, Green & Co.

These readers were especially prepared to meet the requirements of the 1885 Code, and seem to be well adapted for use in schools. In the Primers, a combination of the "Alphabetic" and "Look and Say" methods is used. In Standard III. we notice a few selections from English authors. The press work is good.

WEEKLY PROBLEM PAPERS WITH NOTES, 4s. 6d. SOLUTIONS OF WEEKLY PROBLEM PAPERS 10s. 6d. By Rev. John J. Milne, M.A., Heversham Grammar School. Macmillan & Co., London, 1885.

We have examined these volumes with much pleasure. The first comprises one hundred papers of seven problems each in Algebra, Trigonometry and Elementary Conics, Statics and Dynamics. These are selected by a wise hand from the sho arship and tripos papers set at Cambridge during the past ten or fifteen years, and form the best collection we have seen of problems progressive and instructive, neither too easy nor too difficult. The notes to the first volume, principally on the summation of series, are valuable, rarely met with, and the solutions contained in the second volume, if properly used, will turn the would-be solver's present defeat into future victory.

We commend these volumes to those preparing in mathematics for any of our university or higher Government examinations.

THE FIRST THREE YEARS OF CHILDHOOD.
By Bernard Perez. Edited and translated by Miss Christie. With an introduction by Mr. James Sully. Chicago: Marquis & Co.

Our readers will find this an interesting and profoundly scientific work. Mr. Perez is as painstaking as the late Charles Darwin, and his book is of considerable importance to educators, psychologists and parents.

RECEIVED.

SCENES FROM EURIPIDES. Bacchæ Rivingtons. Stories for Kindergarten and Primary Schools. Ginn & Co. Riverside Literature Series, Nos. 17 and 18. Houghton, Mifflin & Co.

NOTES.

THE Royal Quarto Edition of Webster's Dictionary, published by G & C. Merriam, of Springfield, Mass, continues to meet with great success, and should be in every library.

OUR EXCHANGES.

THE January number of the *Quiver*, which is already to hand, promises well for the new year. We know of no magazine more suitable for Sunday or general reading, not only

on account of its excellent religious articles, but also because the tone of the entire contents is healthy.

"CHRISTMASTIDE with the Germans before Paris," by Archibald Forbes, is a striking feature of the *Harper* for January. Mr. Howell's appearance in the "Editor's Study" will be welcomed by the literary world. In several other respects this is a first-class number, and will make new friends for a popular magazine.

THE first number of the *Eclectic* for 1886 contains nearly one hundred and fifty pages of matter selected from fourteen different papers, magazines and reviews. The selection, as usual, is good.

THE Christmas number of the *Book-Buyer* is one of marked excellence, and interesting to many others besides the comparative few who live in the world of books.

THE verdict in regard to our well-known cotemporary, the *Critic*, is unanimous. Able, fearless and incisive in its articles and reviews, it has won for itself golden opinions. We mention with special pleasure a recent article on Sunday newspapers.

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