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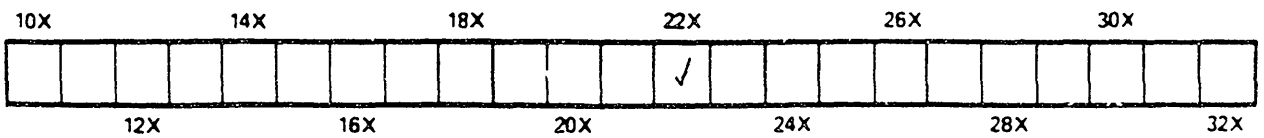

THE CANADA

EDUCATIONAL MONTHLY

AND SCHOOL MAGAZINE.

FEBRUARY, 1887.

MORAL CULTURE IN THE PUBLIC SCHOOLS.*

BY W. N. CLARKE, D.D., PROFESSOR IN TORONTO BAPTIST COLLEGE.

I HAVE been invited to speak upon the question, "What can we do to help in improving the moral culture of the pupils in the public schools?" It is not strange that such a question should engage the attention of the friends of Sabbath schools. The Sabbath school exists because of its interest in the highest welfare of the young. For one hour in the week it has its pupils in its hands; but before they come to it again, a large part of them have spent from twenty to thirty hours under such influence as may have surrounded them in the public schools. There is no need to represent that evil influences are predominant there, in order to make the present question seem important. There is need of no exaggerations or harsh charges; it is enough that the public schools have so vast an opportunity to injure or to help the young, and that the life of the multitudes that are gathered in them has its numberless temptations to evil, as well as its priceless means of improvement. In view of these facts it is no wonder that the friends of the Sabbath school make inquiry about the moral tone of the public schools, and seek to know whether by any means they can help to make it all that it ought to be.

I do not understand that I am invited to discuss the question of the Bible in the schools, or the place and value of religious exercises generally. I assume that in the schools of this land religious exercises will have their place and do their work, and I proceed to enquire what else there is need of in order to the desired improvement in the moral culture of the pupils.

First, and briefly: There is need of *general quickening* in the intensity and interest of school work. If moral tone is to be improved, listlessness must be banished, and the life of the place must be so strong and earnest that it never can return.

*The substance of an address delivered at the Convention of the Sabbath School Association of Ontario, at Hamilton, Oct. 28, 1886.

That there in a vast amount of listlessness within our school-rooms, all teachers know, and all good teachers lament. There are many pupils upon whom the purpose of the school has never taken hold. If they do their work at all, they do it in lifeless routine, and with minds unquickened. Such pupils are not merely a dead weight upon the intellectual progress of the school; they are a corrupting element in its morals. Idleness and mischief are natural companions. An unawakened mind delights in low things rather than in high. A listless school feels nothing of the purifying power of a good ambition, and is open to all debasing influences. Hence an intense, wakeful, earnest life is essential to the moral improvement of a school. Such a life is not to be awakened in a day, I know; for the difficulties are very great, and there is indispensable need of high purpose and abundant energy in the teacher. It is to the teacher, mainly, that we must look for improvement in this great matter. To elevate the moral tone of the schools, train up teachers who can hold the schools above all listlessness, and inspire the pupils with the enthusiasm of education.

Of the second need I wish to say more, because it is less generally recognized. I believe that the course of study in our public schools ought to include *direct moral instruction.* There ought to be text-books and teaching on practical morality. By moral instruction I mean instruction as to doing right, in the relations of man with man; instruction respecting the common duties of life, what they are and how to do them. In these matters I claim that all the pupils in the public schools ought to receive instruction.

The purpose of public education is, as we know, to prepare the young for the life they are to live. Society cannot allow each new generation to come up to maturity ignorant, unawakened, unfitted for useful and successful life; and therefore it takes the young into its schools and teaches them. Is it not plain that it ought to teach them whatever they will most need to know? Must it not prepare them most directly and efficiently for life as they will find it? And what is so important in life as they will find it, as practical duty, right doing between man and man? If they do not learn this, how will they be fitted for life, and of what use will they be to society? And who can be trusted to teach this to the rising generation if the schools do not? Some of them will learn the lessons of duty from wise and godly parents; but how innumerable are those who have no such parents to teach them! It is easy to assume that some one will attend to it,—parents, or Churches, or Sunday schools, or somebody. We do not assume that knowledge of arithmetic can be left to chance for its development, but it is often taken for granted that safe ideas of right living may be trusted to come somehow of themselves. Yet correct ideas of arithmetic are quite as likely to be developed in the work of life without instruction as sound ideas of duty. If society or the State requires that the young shall know how to live aright, it must teach them; and the best place for teaching them is in the public schools.

Two facts that are unquestionable tend to confirm this conclusion. One is that the public school system has constantly tended more and more to become an intellectualizing machine. This is the tendency and danger of the system. It omits moral instruction, for the most part, and devotes itself to the intellect; and the consequence is that the thinking powers are developed at the expense of the

conscience, and intellectual pursuits come to be valued by the young at the expense of practical duty. This danger of attending exclusively to the intellect is the snare of our public schools. It is a danger that must be watchfully guarded against, or the schools that were meant to bless the commonwealth will minister to its worse tendencies. And the other fact, complementary and confirmatory, is that public schools have not thus far fulfilled the expectations of their friends in the promotion of public morality. Many have thought that general education was the surest road to general reformation, just as Lord Macaulay predicted, in his enthusiasm for the Government schools in India, that after they had been thirty years at work not a heathen would remain in all that land. But the thirty years have more than passed, and the idols still stand; nor have similar predictions been better fulfilled elsewhere. In the parts of the world where statistics have been most accurately kept, it has appeared that the extension and the elaboration of the public school system has been attended by a steady increase in juvenile crime. Illiteracy and crime used to be thought of as companions; but the day of such association is passing away. A larger proportion of prisoners is made up of persons under twenty-five years old than was the case when public schools were in their infancy. The fact seems to be that our schools have developed a class with quick wits but dull consciences, able to do sharp things, but indifferent to moral restraints; and this class sends an excessive proportion of its members to prison. They were taught the use of their wits, but not their duties, and the consequence is what might have been foreseen. If the schools do not wish to minister to public vice, they must begin to minister directly to public morality by teaching the actual duties of common life.

The ordinary objection is that morality and religion are closely associated,—so closely that it is impossible to teach morals without coming over into the region of religious and sectarian strife. There is a common impression that to enter this field of instruction would be to trench upon the rights of Churches, or at least, to arouse their prejudices. But pray tell me why? Is the distinction between virtue and vice a denominational difference? Look at this list of subjects, and tell me which of them could not be taught in any public school, to Presbyterians, Baptists, Roman Catholics, Infidels, Jews and Chinamen:

"The preservation of health, temperance, honour, honesty, the knowledge of our rights and their equality, the reciprocal duties, the duties of the citizen to the State, obedience to law, justice, chastity, respect for the liberty and reputation of others, for contracts and for property, the proper definition of lying, calumny, and the like."

All these are matters most practical, and points on which sectarian feeling can take no hold. There is no reason in the world why they should not be adopted into the curriculum of our schools.

Some of the best friends of the good cause object, however, that morality is dependent upon religion and cannot be inculcated, except in a feeble and ineffective way, apart from it. Public schools, they say, cannot be schools of religion, and hence it is vain for them to think of teaching morals. It is true that in religion, properly apprehended, is found the strongest impulse to the performance of all duty; but we must not assert that there are no motives to right action except religious motives, and it is not true that

instruction in morals is useless or misleading unless accompanied by instruction in religion. Very much can be done in teaching good conduct without teaching religious doctrine. Much has been done, and much can be done again, and in a case so urgent it surely is our duty to reject nothing that can help us. It is quite possible for us to be like my neighbour who kept his children in a house without a fire while winter was coming on, because the stove that some one offered him for almost nothing was not as large as he desired.

There is some danger, indeed, that Christian lands may be put to shame in this very way. While we are declining to teach morals where we cannot teach religion, others are finding instruction in morals indispensable, and are giving it. The schools of France fell out of the hands of the Roman Catholic Church a few years ago, and into the hands of men who had small care for religion. Some of them were atheists. But they immediately said that the nation must not let moral instruction lapse with the removal of ecclesiastical power, and proceeded to provide text-books on personal, social and civic duty. Such books are in use in the schools of France. How good they are I do not know; but I do know that in this land text-books of morality could be prepared by the aid of which the young would come up to life with some definite knowledge, where now there is ignorance or only the vaguest thought. And if some practical help can be brought near to those who are growing up in a world so full of vice, surely it is not optional to give the help or to withhold it. It must be given.

A third necessity in order to the improvement of moral culture, as I believe, is *industrial education* in the public schools. I am aware that on this point some will differ with me, but I confidently expect that no very long time will have passed before the difference is left behind.

Here again we should remember that public education is intended to fit the pupils in some good measure for the life that is before them. nd it should be added that labour, daily labour, is to be the lifelong lot of the great majority of those who attend the public schools. Since this is true, it follows that the training that they receive in school should be such as to prepare them, in some way, for a life of labour. If our schools set themselves to the training of a leisured class, they will not only defeat their own true object, but become a curse to the country.

Here we meet another danger from the tendency, inherent in a school system, to over-intellectualizing—the danger of educating children away from their life. Of course it is most desirable that some children should be educated away from the life to which they seem to have been born. It is one glory of the public schools that they help to draw the select few out from among the many to a more intellectual life than the many can live. But it is easy besides for the school to create in the many such tastes and habits as will disqualify them for the life that is before them. Children from the families of labouring men are brought under public education. They come under influences that stimulate the taste for intellectual activity. They are taught that to think, to learn, to know, are the great things. They are fascinated with the idea. They do not learn enough to be very wise, but they do learn enough to think that intellectual pursuits are essentially higher than labour. Conceit of knowledge is easier to get than knowledge, and always comes earlier. When their life in school is ended, intellectual habits have been crudely

begun, and industrial habits have no existence. Very likely the best years for the formation of habits of industry, and the learning of a trade, have passed. The school has done nothing toward training the hands to skill in ordinary work. It has unintentionally instilled the idea that wit is better than work to get a living by, and has thus encouraged a proud revolt from the life to which they were born, while yet it has not fitted them for any other. Thus it comes to pass that so many who have passed through our schools are looking for light work, or work that seems genteel, or are rushing half-educated into the professions and lowering the standard of learning there. Thus it happens, too, that there are recruits in abundance for the army of those who live by their wits, whether honestly or not, and often fall into the clutches of the law.

Think how different it might be. Very sad and very suggestive is this remark of a prison commissoner, that half the benefit of prison life to youthful criminals consists in the formation of habits of patient industry. Why should we leave so great a benefit to be conferred by prison life? Why should society give it only to the criminals? What if the schools gave something of it to all who come within their walls? Is not prevention better than cure? Is not a child saved to industry better than a criminal won back to it by the incidental benefit of his penal shame? Grant that the schools cannot do everything, and cannot do anything very great in this direction: nevertheless, what they can do is well worth doing. What can they do? In answer I may ask, Why should it not be one of the duties of the public school to train the hands of the children to deftness and skill in working? These wonderful hands that God has given us, how little of the work that is possible to them do they do, for want of skill! If they had been wisely trained and practised in our childhood, so that their utmost had become possible to them, how much better had we been fitted for the daily necessities of our lot! As for the great multitude who must use their hands in some way or other all their days, even a little manual practice, substituted for complete disuse in school-time, would have done them more good than some part of the Roman history that they tried to learn. In this working world, why should not power to work stand among the first lessons that society teaches to its young?

The difficulty of adjusting such instruction to the existing curriculum would, of course, have to be met, but difficulties greater far have been encountered and overcome in the work of education. The solution in this case has already been reached in part, by the introduction of the Kindergarten method. This very thing, which is the foundation of industrial success, the use of the hands, is already taught to many of the youngest children. I believe the time is coming when no primary teaching will be admitted that does not make some use of this natural and charming method. I believe too that kitchen-garden instruction is destined to take its place in the public schools: for it has as good a right there as arithmetic. I doubt not that the system will be extended to other kinds of work, and the rudiments of labour more generally will be taught by illustration. In some cities, moreover, the first steps of learning and practice in some of the leading trades are already taught in the public schools. Wood-work in its various forms, practical and ornamental, from carpentry to carving, is taught under the auspices of the public boards, to the great benefit of the rising race. Slowly, but surely, this work is destined to increase: not to the exclusion of the present work of the schools,

by any means, but so far that labour shall be recognized as a constant subject of instruction, and the great mass of workers shall find the schools a direct help in preparation for their life.

If such work were carried on in the schools for a generation, it is plain that great changes for the better would be wrought in the moral estimates of the community. But the practical benefit would not be delayed till then. Such instruction would tend at once to improvement in the moral tone of the schools themselves. That school will have the best moral tone, which best serves its true end. The effect of education that trains the young away from sympathy with their own life and duty, is morally confusing and depressing. If a school ministers to pride of intellectual pursuits and contempt of labour, the moral tone of it is unhealthy. One of the directest ways to purify and elevate the moral spirit of our schools is to bring them into line with the actual work of life; to recognize the fact that man is destined to be a labourer as well as a thinker and a learner; to put honour upon labour by keeping it constantly in sight as one of the ends of instruction. When this is done, the pupils will feel more distinctly that their school-life is the true and helpful road to their actual future, and they can go forward in it with a warmer moral enthusiasm.

I must close with a few words of counsel to those who work in our Sabbath-schools, in answer to the question what they can do toward encouraging in the public schools a higher moral quality:

1. Frankly recognize the public school as an ally, a worker in the same field and for the same end as the Sabbath school. Never despise the public schoool as secular, and listen to no taunts against it as godless. The two agencies are working for one object, namely, the highest good of the same class of persons. If the public school is conducted upon the highest principles, it can do more for those persons than can the Sabbath school, for it has far greater opportunities. Let no jealousy, and no disparaging thoughts, regarding the public school, ever be cherished for a moment, as if it were not also the servant of God for good. Its range of work is different, but its mission is high and worthy, and those who labour on the Sabbath for Christ and His Gospel should frankly acknowledge it as their friend.

2. Make the Sabbath school more and more a place of work, worthy to be called a school. If it is not such, the name of school is degraded and demoralized on the Lord's Day, and the children are sent to their teachers on the week days with the idea that school does not necessarily demand work. This is a possibility of which Sunday school teachers, probably, do not often think. Do not degrade the quality of work by excessive use of lesson helps. Labour to banish listlessness. Make it a school indeed, in which genuine work shall be done, and solid acquirements shall be gained.

3. Teach the children on the Sabbath, that fidelity in the common school is an important part of their duty to God and Christ. Send them to their week day work with wills and consciences fortified by strong teaching. Do not allow them to suppose that the Sabbath school and its motives have to do with the Sabbath day alone, or that religion is a thing for special hours and places. Tell them to serve their God and Saviour by learning their lessons well, and by doing faithfully and honourably all the work of the schoolroom and of the playground. Here is a direct opportunity for the Sunday school to help in improving the moral tone of the public schools.

4. Give as much moral teaching in

the Sabbath school as is possible. The time is limited, and other themes of course demand attention; yet seize every opportunity to inculcate the lessons of practical duty in common life. Create in the young an appetite for knowledge of right and wrong in all their applications. Seek to give them consciences well-developed and well-taught, able to discriminate good and evil; and do not suppose that the Sabbath school has done its duty until it has given something of this teaching.

5. Put honour upon labour. Do nothing that can help to encourage the young in contempt for hard work. Let not the Sunday school be a place for the children of well-to-do people, where the children of labouring men are looked upon askance, and the poor are patronized. For the purposes of the public school, there is full equality among all who enter; and the equality is essential to the success of the school in its mission. Do not let the Sunday school, which professes to honour our blessed Lord, the poor man's Friend, teach the children, directly or indirectly, any notions of contempt for the poor or scorn for the labouring. Make all alike welcome, not in the patronizing spirit, but in true fraternity; or else the children will go out on Monday with ideas that will harm the public school. Help rather to nourish in them the spirit of love, to which all are brethren.

GERMAN SCHOOLS.

BY PROF. JOHN K. LORD, DARTMOUTH COLLEGE.

THE success of a system is judged by results, by its practical adaptation to its proposed end. What are the results of the German system of education? Its excellencies are on its face; and a plain description of it indicates very clearly what are its strong points and what results it must produce. I shall speak principally, therefore, about its failings.

But, first, of its excellencies no one could fail to mention its *thoroughness*. This comes, in the first place, from the fact that the scheme is *consistent*. From the time a boy enters the people's school, at six, till he leaves the gymnasium or real-schule, at eighteen or twenty, he is pursuing a course that is homogeneous and consistent. There is no jar in passing from the lower to the higher grade. The break that often comes with us between the primary school and the academy, and between the academy and the college, does not occur. It is impossible, then, that teachers in different grades should be ignorant of the methods and principles that guide one another. They all are members of one body, and work in a common plan. Each is the complement of the other, and does his part in the joint building.

Again, the *time* is sufficient. For twelve or fourteen years, at the most plastic period of life, a boy is subject to a continuous influence. Impressions once made are not suffered to wear away for lack of repetition; what is begun is carried on, developed and matured. There is no attempt to do in one year what belongs to two. An ample course is prescribed for a period of time which is sufficient for its completion, and which is in no danger of being curtailed.

Thoroughness depends largely upon proper supervision. This is perfectly scured in Germany. There are no loose ends; there is no referring of important principles of management to the vagaries and idiosyncrasies of individuals. Individuality has its full scope, but within the lines of established supervision. Organization that does not make a slave or an automaton of the individual is always most effective toward a given end; and such organization exists in the German school.

But one of the chief excellencies of the system is, that all the teachers are thoroughly trained and equipped for their work. All are not of equal excellence, but none are poor or inexperienced. No one is entrusted with responsibility who has not shown his capability for it, and promotion follows upon success. As far as possible, especially in the lower grades, the teacher is encouraged to throw aside the book, and to teach according to his own ideas. He is not cramped or confined to any particular method, but seeks to impart his instruction in the freshest and most personal way. In this self-reliance he finds the highest stimulus, since he true teacher is never content to use the second time what has once been employed, till it has been subjected to revision and offered to himself for improvement. His position in school is helped by his position in the community, where he is held in high esteem. His work is both honourable and important, and he is unwilling to see it suffer in his hands.

These very things, however, that tend to make the schools thorough, produce an evil,—that of *over-pressure.* The school years are long, about forty-two weeks,—and the hours are long,—never less than five, and in some of the upper classes, seven hours a day. Two afternoons a week only are given up, and many hours must be spent in study at home. The discipline is rigorous, and covers, not the school hours only, but follows the boys to their homes. The burden which they bear is too heavy, and makes them listless and dispirited. German boys never play; they have no games, no sports. Life is to them a serious business. During a year's residence in a German town,—where were a university, a gymnasium, a *real-schule*, people's schools, and various private schools, and where, having two boys of my own in school, I had good opportunity to learn of boy's life,—I never saw or heard, with the exception of one game of hide-and-seek, a single game. Once in crossing a large court, I saw a company of boys choosing sides for a game of ball. I watched with interest a spectacle so unusual, wishing to see how a German boy would look when actually engaged in a game; but I was disappointed, as the company soon broke up in a fight. I was not surprised; for fighting, not in anger or hot blood, but easily and naturally, is the amusement of the German boy. Not that he is more pugnacious than other boys, but the military discipline that curbs him in school, and the sight of soldiers whenever he steps into the street, keep constantly before him the idea, and almost the necessity, of fighting. This lack of healthful sport seriously affects the boy, depriving him of much enjoyment, and making him old before he is mature.

The over-pressure of the schools is a serious cause of ill health. The nearsightedness of the Germans is proverbial, and results largely from the strain upon the eyes during school years. Statistics show that when children enter school at six scarcely five per cent have defective vision; but when they leave it as young men, at twenty, nearly fifty per cent are

obliged to resort to glasses for aid. Undoubtedly this result comes partially from the climate, that for seven or eight months in the year, and sometimes for two or three months in succession, covers the land with a pall of clouds and fog, necessitating an extensive use of artificial light. Bad light and bad air combine with bad texts and over-confinement to injure the most sensitive of bodily organs. But the general health of the scholars often suffers. Within the past year it has been shown by statistics, collected privately and also at the direction of the government, that in the public schools of Copenhagen more than fifty per cent of the pupils between the ages of twelve and sixteen were not in the possession of perfect health. This would probably not hold good of Germany; but the proportion of feeble children is very large. One cannot walk the streets of a German city, and see the large number of dwarfed and stunted children without believing that the strict discipline of the schoolroom has something to do in producing so lamentable a result; and, in fact, many are now raising their voices in opposition to a system that develops the mind at the cost of the health.

But there is another objection against the schools which, as against a system of training, is even greater; it is that, while their work is thorough and their instruction exact, covering many subjects, they yet fail to develop independent judgment or practical character. The pupil, on issuing from them, has much information for his years, much acuteness of mind, but little self-reliance or acquaintance with the world about him. Of that healthful education that comes from the play-ground, from the jostling of boy with boy in the field where all are equal, from the clash of interest that requires quick decision and prompt action, or from that larger mingling with men or observation of affairs so common with us, he has nothing. He does not escape from the immediate circle of the teacher's influence. He is taught to think, but only on the subjects that come from his books; from the larger interests and activities of daily life he shrinks unprepared. He is accustomed to have things done for him, not to do them himself; to be directed, not to decide; to obey, and never to initiate. He lives under a paternal government, which, with his father and his teacher, directs his conduct and his opinion alike. He has no inducement, as well as no opportunity, to develop self-reliance and practical judgment; and should he do so, he would find them out of harmony with all his surroundings. The difference between an American and a German boy of fourteen, or even twelve, years is very marked. The former is confident, the latter, distrustful; the former makes plans, the latter waits for direction; the former is observant, the latter, bookish; while one sees and does, the other wonders and hesitates; and while the American acts, the German asks, "Is it permitted?" This lack of independence is fostered by the goal which the school-boy sets before his eyes. During all his preparatory work he is looking forward to that final examination that determines, in so great a degree, his subsequent life. That is a day of judgment for which he prepares with fidelity and earnestness; but he well knows that only a certain kind of preparation is valuable. Independence, self-reliance, personal manliness, count for nothing. The knowledge that comes only from books, that follows the definite lines of prescribed courses; a memory surprisingly trained in small and special points; skill in distinguishing theories rather than in applying them,—these are the requirements

for success. No one will depreciate them. They are important in themselves, and inestimable when joined with force and independence of character; but when obtained at the expense of these qualities, the loss may be greater than the gain. All the influences that surround the growing boy tend to theory rather than practice, to render him speculative rather than practical.

This same evil is continued in the university. Nowhere does the student receive general and comprehensive views. He chooses his special subjects, and hears lectures upon them only. True, the whole university is open to his choice; but the prospective examination for his degree prevents departure from a special line. The university is thus broken up into a number of schools for the training of specialists in their respective subjects. Students issue from the German universities undoubtedly better trained in their chosen branches than the students of other nations; but what they gain in concentration they lose in adaptation. They are limited in their horizon, and contracted in their sympathies and their energies. This defect is recognized by Germans themselves; and a critic of the universities has thus described them: "The student becomes a scholar; and after the legal course is over, he comes to an understanding with the teacher, along with his fellow-workers in the same subject, to follow a mean programme. He who has not made natural science his special department leaves the university without an idea of the weighty discoveries of the natural philosophers. He who has gone through the course in medicine gets no general survey of the many branches of study necessary for his calling; he has explored but one; and all subjects beyond his professional range are absolutely closed to him. The law student knows nothing of the structure of the human body; the surgeon, nothing of the elementary groundwork of law and justice; the first principles of social economy, literature, ethnology, history, and all those matters which every educated man ought to know something about, if he is to mix in society, are to a terrible degree strange to those studying in special departments. The lecture-rooms lie side by side; the many schools are under one roof; the professors belong to one senate; the whole society is tied together by statutes and external organization, but the spiritual link is missing; personal avocations insulate, particular studies separate the students; and the university is nothing more than a congeries of schools for specialists."

Such are some of the excellencies and the defects of the German schools. As in every other system, the two are mixed; and it is perhaps remarkable that with so much of good there is so little of evil. Some things are good for Germany that would not be good for us. The nature of her institutions and the habits and customs of her people are so different from ours that truthful comparisons are difficult to institute; and in dissimilar conditions we may freely admit excellencies which we should not wish to imitate. On the whole, the system of training in Germany meets the wants of the people to a remarkable degree; and if it cannot claim to be an ideal one, may yet combine more advantages and fewer defects than that of any other European nation, or, possibly even our own. —*Education.*

MATTHEW ARNOLD'S FAREWELL.

MR. MATTHEW ARNOLD has been presented by the schoolmasters of the Westminster district with a testimonial, on his retirement from the office of Inspector of Schools. In returning thanks he said:

Once after we had been inspecting a school in the north of London, we were entertained at luncheon by one of the managers, who said so many kind things about me that at last, growing embarrassed, I cut it short by saying, "Nobody can say I am a punctual inspector." You have praised me so much that I feel almost disposed to say something disparaging of myself now. The truth is, my path as an inspector has been made very smooth for me. Everywhere I have found kindness; everywhere I have favours to acknowledge and obligations to express. I hardly know where to begin. I will begin where my obligations are least. To Government I owe nothing. But then I have always remembered that under our Parliamentary system the Government probably takes little interest in such work, whatever it is, as I have been able to do in the public service, and even perhaps knows nothing at all about it. And, ladies and gentlemen, we must take the evils of our system along with the good. Abroad, probably, a Minister might have known more about my performances. But then abroad I doubt whether I should ever have survived to perform them. Under the strict bureaucratic system abroad I feel pretty sure I should have been dismissed ten times over for the freedom with which on various occasions I have expressed myself on matters of religion and politics. Our Government here in England takes a large and liberal view of what it considers a man's private affairs, and so I have been able to survive as an inspector for thirty-five years; and to the Government I at least owe this—to have been allowed to survive for thirty-five years.

When I pass from Government this somewhat bounded kind of obligation ceases, and my obligation becomes ample and full indeed. As to the permanent officials, most of them have been my personal friends at the time of life when friendship has an intimacy and a savour which it can hardly acquire afterwards; but all the officials of the department with whom I have had to do have lightened for me the troubles of an inspector's life, instead of aggravating them. I suppose the permanent officials are sometimes found by an inspector to be harsh and trying, but in that case I am like the dairy-maid in the rustic poem, who found the dun cow that was vicious to others, gentle to her. My colleagues, the inspectors, I have found always friendly and ready to help; we have had no quarrels, nor an approach to one. Then my assistants—how my assistants have smoothed my path for me. I know it is thought at the office that an inspector's path is often too much smoothed for him by his assistant. My rule was—and I think it a good one—to let my assistant do whatever he could do as well or better than I could myself. I found that to be a considerable quantity, I confess. But I do not think my assistants felt themselves to be unfairly put upon. Lastly, I come to the managers and teachers. From the time when the authorities of the Borough-road and the Wesleyan Educational Committee acquiesced in my appointment, though it was made, let me tell you, irregularly and with neglect of their right of veto, down to

the other day, when Canon Fleming insisted on entertaining from the Conference quite an unreasonably large party of us, the managers, too, have been my kind friends. And the teachers! When I think of their good will, their confidence in me, their alacrity to comply with my wishes—when I think of all this, crowned finally by our meeting to-night and by their beautiful gift—I am indeed disposed to say with Wordsworth that it is the gratitude of man which leaves one mourning.

I ask myself with astonishment to what I owe this confidence, this favour. I assure you I am not at all a harsh judge of myself. But I know perfectly well that there have been much better inspectors than I. Whence, then, all this favour and confidence towards me? Well, one cause of it was certainly that I was my father's son; another cause has been, I think, that I am more or less known to the public as an author, and I have been always touched to see how the teachers—so often reproached with being fault-finders and over-weening—are disposed to defer to their inspector on the score of any repute he may have as an author, although undoubtedly an author of repute may be but a bad inspector. However, I do not mean to say that I think I have been altogether a bad inspector. I think I have had two qualifications for the post. One is that of having a serious sense of the nature and function of criticism. I from the first sought to see the schools as they really were. Thus, it was soon felt that I was fair, and that the teachers had not to apprehend from me crotchets, pedantries, humours, favouritism and prejudices.

That was one qualification. Another was that I got the habit, very early in my time, of trying to put myself in the place of the teachers whom I was inspecting. I will tell you how that came about. Though I am a schoolmaster's son, I confess that school teaching or school inspecting is not the line of life I should naturally have chosen. I adopted it in order to marry a lady who is here to-night, and who feels the kindness as warmly and gratefully as I do. My wife and I had a wandering life of it at first. There were but three lay inspectors for all England. My district went right across from Pembroke Dock to Great Yarmouth. We had no home; one of our children was born in a lodging at Derby, with a workhouse, if I recollect right, behind and a penitentiary in front. But the irksomeness of my new duties was what I felt most, and during the first year or so this was sometimes almost insupportable. But I met daily in the schools with men and women discharging duties akin to mine, duties as irksome as mine, duties less well paid than mine, and I asked myself, Are they on roses? Would not they by nature prefer, many of them, to go where they liked and do what they liked, instead of being shut up in school? I saw them making the best of it; I saw the cheerfulness and efficiency with which they did their work, and I asked myself again, How do they do it? Gradually it grew into a habit with me to put myself into their places, to try and enter into their feelings, to represent to myself their life, and I assure you I got many lessons from them. This placed me in sympathy with them. I will not accept all the praise you have given me, but I will accept this—I have been fair, and I have been sympathetic.

And now, my kind friends of many years, before we come to the word which, as Byron tells us, must be and hath been, although it makes us linger, the word farewell, let me give a counsel and make a reflection. First, the counsel. You have a very strong association, the Elementary Teachers'

Union. Insist on having a Minister for Education. I know the Duke of Richmond told the House of Lords that, as Lord President, he was Minister of Education; but really the Duke of Richmond's sense of humour must have been slumbering when he told the House of Lords that. A man is not Minister of Education by taking the name, but by doing the functions. To do the functions he must put his mind to the subject of education; and so long as Lord Presidents are what they are, and education is what it is, a Lord President will not be a man who puts his mind on the subject of education. A Vice-President is not—on the Lord President's own showing—and cannot be, Minister for Education; he cannot, therefore, be made responsible for mistakes and neglects. Now, what we want in a Minister for Education is this—a centre where we can fix the responsibility. Insist, therefore—as you, the chief sufferers by mistakes and neglects in the management of education, have a right to insist—insist on having a Minister for Education.

There is my counsel; now for my reflection. My reflection is one to comfort and cheer myself, and I hope others, at this our parting. We are entering upon new times, where many influences, once potent to guide and restrain, are failing. Some people think the prospect of the reign of democracy, as they call it, very gloomy. This is unwise, but no one can regard it quite without anxiety. It is nearly 150 years since the wisest of English clergymen told the Lord Mayor and Sheriffs of London in a hospital sermon that the poor are very much what the rich make them. That is profoundly true, though perhaps it rather startles us to hear it. On the other hand, it is almost a commonplace that children are very much what their teachers make them. I will not ask what our masses are likely to be if the rich have the making of them. I prefer to ask what they are likely to be so far as the teachers have the making of them. And on the whole—and here is the consoling reflection with which I shall end—though the teachers have, of course, their faults as individuals, though they have also their faults as a class, yet, on the whole, their action is, I do think and believe, powerful for good. And not in England only, but in other countries as well, countries where the teachers have been much spoken against. I have found it so. I find plenty of deleterious and detestable influences at work, but they are influences of journalism in one place, in another influences of politicians, in some places both the one and the other; they are not influences of teachers. The influence of the elementary teacher, so far as my observation extends, is for good; it helps morality and virtue. I do not give the teacher too much praise for this; the child in his hands so appeals to his conscience, his responsibility is so direct and palpable. But the fact is none the less consoling, and the fact is, I believe, as I have stated it. Burke speaks of the ancient and inbred integrity and piety of the English people; where should this influence of the teachers for good be so strong and sustained as here? Thus, in conclusion, we are carried beyond and above the question of my personal gratitude, although that, too, is very deep and real. I love to think of the elementary teachers, to whom I owe so much, and am so grateful, as more and more proving themselves to deserve, and more and more coming to possess, in the days which are now at hand for us, the esteem and gratitude of the entire country.

THE STUDY OF SCIENCE.

IN the first place, science adds immensely to the interest and happiness of life. It is altogether a mistake to regard science as dry or prosaic. The technical works, descriptions of species, etc., bear the same relations to science as dictionaries to literature. Mackay more justly exclaims :

> Blessings on Science! when the earth seemed old,
> When Faith grew doting, and our reason cold,
> 'Twas she discovered that the world was young,
> And taught a language to its lisping tongue.

Occasionally, indeed, it may destroy some poetical myth of antiquity, such as the ancient Hindoo explanation of rivers, that "Indra dug out their beds with his thunderbolts, and sent them forth by long continuous paths." But the real causes of natural phenomena are far more striking, and contain more real poetry, than those which have occurred to the untrained imagination of mankind. Botany, for instance, is by many regarded as a dry science. Without it one might admire flowers and trees as one may admire a great man or a beautiful woman whom one meets in a crowd; but it is as a stranger. The botanist, on the contrary—nay, I will not say the botanist, but one with even a slight knowledge of that delightful science—when he goes out into the woods (whether they present the delicate tracery of winter, the tender green of spring, the richness of summer, or the glory of autumn) or into any of those fairy forests which we call fields, finds himself welcomed by a glad company of friends, every one with something interesting to tell. Dr. Johnson said that, in his opinion, when you had seen one green field you had seen them all; and even a greater than Johnson, Socrates, the very type of intellect without science, said he was always anxious to learn, and from fields and trees he could learn nothing. It has, I know, been said that botanists

> Love not the flower they pluck, and know it not,
> And all their botany is but Latin names.

Contrast this, however, with the language of one who would hardly claim to be a master in botany, though he is certainly a loving student.

"Consider," says Ruskin, "what we owe to the meadow grass, to the covering of the dark ground by that glorious enamel, by the companies of those soft, countless and peaceful spears of the field! Follow but for a little time the thought of all that we ought to recognize in those words. All spring and summer is in them—the walks by silent scented paths, the rest in noonday heat, the joy of the herds and flocks, the power of all shepherd life and meditation; the life of the sunlight upon the world, falling in emerald streaks and soft-blue shadows, when else it would have struck on the dark mould or scorching dust; pastures beside the pacing brooks, soft banks and knolls of lowly hills, thymy slopes of down overlooked by the blue lines of lifted sea; crisp lawns all dim with early dew, or smooth in evening warmth of barred sunshine, dinted by happy feet, softening in their fall the sound of loving voices." Even if it be true that science was dry when it was buried in huge folios, that is certainly no longer the case now; and Lord Chesterfield's wise wish that Minerva might have three graces as well as Venus, has been amply fulfilled. . . .

Too many, however, still feel only in nature that which we share "with the weed and the worm"; they love birds as boys do—that is, they love throwing stones at them; or wonder if they are good to eat, as the Esquimaux asked of the watch; or treat them as certain devout Afreedee villagers are said to have treated a descendant of the prophet—killed him and worshiped at his tomb; but gradually we may hope that the love of nature will become to more and more, as already it is to many, a "faithful and sacred element of human feeling."

Where the untrained eye will see nothing but mire and dirt, science will often reveal exquisite possibilities. The mud we tread under our feet in the street is a grimy mixture of clay and sand, soot and water. Separate the sand, however—let the atoms arrange themselves in peace according to their nature—and you have the opal. Separate the clay, and it becomes a white earth, fit for the finest porcelain; or if it still further purifies itself, you have a sapphire. Take the soot, and if properly treated it will give you a diamond. While, lastly, the water, purified and distilled, will become a dew-drop or crystallize into a lovely star.

Or, to quote another beautiful illustration from Ruskin, speaking of a gutter in a street, he well observes, that "at your own will you may see in it either the refuse of the street or the image of the sky."

Nay, even if we may imagine beauties and charms which do not really exist; still, if we err at all, it is better to do so on the side of charity; like Nasmyth, who tells us in his delightful autobiography that he used to think one of his friends had a charming and kindly twinkle, till one day he discovered that he had a glass eye.

But I should err indeed were I to dwell exclusively on the importance of science as lending interest and charm to our leisure hours. Far from this, it would be impossible to overrate the importance of scientific training on the wise conduct of life. There is a passage in an address given many years ago by Professor Huxley to the South London Working Men's College which struck me very much at the time, and which puts this in language more forcible than any which I could use.

"Suppose," he said, "it were perfectly certain that the life and fortune of every one of us would, one day or other, depend upon his winning or losing a game of chess. Don't you think that we should all consider it to be a primary duty to learn at least the names and the moves of the pieces? Do you not think that we should look with disapprobation amounting to scorn upon the father who allowed his son, or the state which allowed its members, to grow up without knowing a pawn from a knight? Yet it is a very plain and elementary truth that the life, the fortune, and the happiness of every one of us, and more or less of those who are connected with us, do depend upon our knowing something of the rules of a game infinitely more difficult and complicated than chess. It is a game which has been played for untold ages, every man and woman of us being one of the two players in a game of his or her own. The chessboard is the world, the pieces are the phenomena of the universe, the rules of the game are what we call the laws of nature. The player on the other side is hidden from us. We know that his play is always fair, just and patient. But also we know to our cost that he never overlooks a mistake, or makes the smallest allowance for ignorance. To the man who plays well the highest stakes are paid, with that sort of overflowing generosity which with the strong shows delight in strength. And one who plays ill

is checkmated—without haste, but without remorse."

I have elsewhere endeavoured to show the purifying and ennobling influences of science upon religion; how it has assisted, if indeed it may not claim the main share, in sweeping away the dark superstitions, the degrading belief in sorcery and witchcraft, and the cruel, however well-intentioned, intolerance, which embittered the Christian world almost from the very days of the apostles themselves. In this she has surely performed no mean service to religion itself. As Canon Fremantle has well and justly said, men of science, and not the clergy only, are ministers of religion. Again, the national necessity for scientific education is imperative. We are apt to forget how much we owe to science, because so many of its wonderful gifts have become familiar parts of our every-day life, that their very value makes us forget their origin. At a recent celebration of the sexcentenary of Peterhouse College, near the close of a long dinner, Sir Frederick Bramwell was called on, some time after midnight, to return thanks for applied science. He excused himself from making a long speech on the ground that, though the subject was almost inexhaustible, the only illustration which struck him as appropriate under the circumstances was the application of the domestic lucifer to the bedroom candle. Sir Josiah's life is itself a remarkable illustration of this, and one cannot but feel how unfortunate was the saying of the poet that

> The light out-speeding telegraph
> Bears nothing on its beam.

The report of the Royal Commission on Technical Instruction, which has recently been issued, teems with illustrations of the advantages afforded by technical instruction. At the same time, technical training ought not to begin too soon, for, as Bain truly observes, "in a right view of scientific education the first principles and leading examples, with select details, of all the great sciences, are the proper basis of the complete and exhaustive study of any single science." Indeed, in the words of Sir John Herschel, "it can hardly be pressed forcibly enough on the attention of the student of nature, that there is scarcely any natural phenomenon which can be fully and completely explained in all its circumstances, without a union of several, perhaps of all, the sciences." The most important secrets of nature are often hidden away in most unexpected places. Many valuable substances have been discovered in the refuse of manufactories; it was a happy thought of Glauber to examine what everybody else threw away.—*Sir John Lubbock, Bart., M.P., in the Contemporary Review.*

DR. HINGSTON, of Montreal, having made a study of climates, has given the first place for clearness of the atmosphere and general healthiness to Canada. He says that the mornings and evenings are clearer here han elsewhere; the sky is brighter, the air in winter is colder, than in most temperate climates, and the atmosphere in summer is warmer. Our climatic condition is producing a new race of men out of the old material. The stranger coming here from Europe will probably observe that among the thoroughly acclimatized section the foreheads of many are higher, but not broader, than those of people across the sea; and at an earlier age than in Europe, gray, or more freed from hair; the nose sharper and more pointed, the lower jaw narrower; the shoulders square and often higher, and the complexion more sallow, as if bronzed by the intemperance of the seasons. The fauna and the flora also differ, under climatic influences, from those from which they spring. There can be no doubt about the climate; but are not the physiological changes the race is undergoing here more attributable also to our mode of living, the differences in food, and the much greater quantity of work the average man performs here than in Europe?

NOTES FOR TEACHERS.

THE Government, frightened out of its wits by the vindicative violence of Dr. Ryerson, rushed into a sweeping change of our educational system, when it had better have considered calmly the alternative of modification. Supposing it to be better that the administrative functions, with the financial responsibility, should be vested in a political minister, there are still important functions which a body like the Council of Instruction, enjoying the confidence of all parties, seems best qualified to discharge. Especially is it best qualified to settle the text books, the squabbles about which, religious, literary and commercial, have kept the educational world in hot water ever since the political system was introduced. To the Council no supicion of corrupt or sinister influence, any more than of partisanship, could attach. The account of the revision of Collier's history, with a view to the excision of language offensive to the Roman Catholics, which was given the other day by the Archbishop, shows how quietly the Council could settle a question which under the political system would set the Province in a flame. The curriculum also might be better settled by an impartial authority, and by one whose ordinances would be more stable than those of an ephemeral minister, while the controlling influences of men really eminent in education, and above hollow display, would be the best practical safeguard against the introduction of ambitious subjects which cannot be thoroughly taught, and can only fill the pupil with conceit. Possibly the election of the heads of training colleges might with advantage be entrusted to the same hands. For all this two meetings of the Council in each year —perhaps even one meeting—would suffice. Plenty of work would still be left for the Minister of Education.

THE advocates of a political Ministry of Education are right in pointing to France as the country in which the political and centralized system is carried to the highest perfection. But they should also tell us what are the fruits. Mr. Hamerton, than whom we believe there can hardly be a better authority, describes the French peasantry as not wanting in natural intelligence, but "inconceivably ignorant." "The French peasant," he says, "is not a Philistine, he has not any contempt for culture, he simply does not know that there is such a thing; he does not know that science and art and literature exist." A peasant, and one quite of the higher order, fancied that Mr. Hamerton's printed books were manuscripts written by their owner, and compared them with other printed books which he thought were written by the booksellers. He had, in short, never heard of the existence of printing. "From the intellectual point of view," says Mr. Hamerton, "France is a Scythia with very small colonies of Athenians to be found in it here and there." Politically, the French peasant does not know his right hand from his left, and the constituencies are swept, as Mr. Hamerton tells us, by the most ignorant and absurd fancies. It is difficult not to connect this failure in some measure with the tendency of a highly centralized system to kill local interest and activity. The refined taste of Mr. Matthew Arnold is pleased by the symmetry of the machine and the

smoothness of its working. But a system of education must be judged by its results.— *Week.*

ESSENTIALS OF A SCHOOL EDUCATION.

1. Every pupil should be taught to read intelligently the literature of the day—not merely to *know the words*, but to understand their meaning, and to give to each word its proper force and vocal significance.

2. To write neatly and legibly, in proper form, an ordinary business letter.

3. To spell correctly, not, of course, all the words in the dictionary, but at least such words as are of common use in commercial circles and in every-day conversation.

4. To make such calculations in arithmetic, rapidly and accurately, as might be required in the daily business of the merchant, the farmer, or the artisan.

5. To know the history of his country minutely, and such general historical facts as may be said to have exercised a wide influence in shaping the destinies of other nations.

6. To have such a knowledge of places as would localize his knowledge of the history, climate, productions and races of other countries.

7. To be so trained in the art of composition as to be able to express clearly, either on paper or orally, the knowledge he possesses.

8. To be able to delineate pictorially what cannot be as well expressed in words.

9. There is an education that is far above the foregoing particulars as heaven is above earth. A pupil may read and write well, spell and calculate correctly, know the history of his country, have a knowledge of places, be well trained in the art of expression, and draw artistically, but fail in life, because he has not the power of *doing his own thinking*, and is not careful about his moral obligations. It is not essential that the child should know the three R's thoroughly, but it is essential that he be able to use the powers he has to the best advantage to himself and the people with whom he associates.—*School Journal* (N.Y.).

THE Modern Language teachers of Ontario have organized themselves into a society. The first meeting was held on December 29th and 30th, 1886. At the first session a constitution was adopted, and the following officers were elected : — Honorary President, Dr. D. Wilson; President, W. H. Van der Smissen, M.A.; Vice President, G. E. Shaw, B.A.; Sec.-Treas., J. Squair, B.A.; Councillors, Messrs. W. H. Fraser, B.A., P. Toews, M.A., John Seath, B.A., R. D. Keys, B.A., F. H. Sykes, M.A., J. M. Hunter, M.A., LL.B., R. Balmer, B.A., and E. J. McIntyre, B.A. The following papers were read :—"The Status of Modern Language Study in Ontario," by G. E. Shaw, B.A.; "The Uses of Modern Language Study," by F. H. Sykes, B.A.; "French in University College," by J. Squair, B.A.; "Methods of Teaching Moderns to Beginners," by A. W. Wright, B.A.; Address by Dr. Wilson; "Examinations in Modern Languages," by R. Balmer, B.A.; and "English Grammar and Literature," by E. J. McIntyre, B.A. Resolutions were passed recommending changes in the Modern Language Curriculum of Toronto University, and also in the French and German papers in the examinations of the Education Department. The session was successful in every respect, and there seems to be no doubt that the Modern Language Association of Ontario will be able to do much for the advancement of learning in this Province.

QUEENS WITH GLORIOUS REIGNS.—England has been fond of Queens, and has usually given them a good name. Of Matilda we know very little. But the faults of Mary were attributed in great part to her husband, while both Elizabeth and Anne have, perhaps with equal reason, been decorated with the name of "Good." It certainly has so happened that the reigns of the last three queens who have occupied the English thrones have been both happy and glorious. In all alike we see great developments of the national energy, the flowering of a brilliant and characteristic literature, and the growth of new political and social ideas inaugurating new stages of progress. If we carry our minds back to the accession of Queen Elizabeth, we find ourselves in a world which has, indeed, little resemblance to our own, but which was an entirely new departure from the world of the Plantagenets. Similarly, in the reign of Anne, we are face to face with a political and social *régime* wholly different in kind from that of the seventeenth century, the departing footsteps of which we look back upon through the reign of William. In our own time it is unnecessary to say that we live in a transition period from the stereotyped thoughts and habits of the pre-reformers to some unknown and unconjectured destiny. Thus all three reigns have been signalized by the same distinctive feature, have each in some measure ushered in a new age, and have been distinguished by the same literary and intellectual activity. To which of them history will assign the supremacy is a question which we shall not touch. The Elizabethan, the Augustan and the Victorian eras have each their special glories to boast of, and their comparative greatness must depend to a great extent on the character of the mind which contemplates them.—*London Standard.*

THE FUTURE OF THE GIRL-GRADUATES.—Mrs. Lynn Linton calls attention to the fact that careers for women are not controlled by the same fixity of purpose as those which open out to men. The element of marriage often comes in to extinguish the ambition for eminence in science or general culture. But Mr. Higginson has recently shown [in the *Critic* of December 4th] that the girl-graduates in this country are opening the way to the higher education of women as it has never been opened before. They are forming an associated body of women, who will have a powerful influence over the future of their sex, and who to-day hold the future education of American women in their hands. The first thing is to educate these women as they desire; the next is to provide them with something to do which is in line with their education; the next is to bring their education to bear upon the development of society.

This final and largest end is largely promoted by their organization under the name of the Association of Collegiate Alumnæ. This is to-day, for the first time in the history of the country, a body of women who have first received the training which qualifies them to undertake things that need to be done for their sex, and who have the largeness of outlook that is sufficient to see the opportunities which are opening out to women in the multiplied interests of the country. The Society to Encourage Studies at Home, which has had much to do with the creation of a larger and more wholesome sphere for women, has been a pioneer in making women the centres of an educational influence in different parts of the country, and their collegiate education and associated life create a still more potent influence in the same direction. The Association of Collegiate Alumnæ proposes to organize the energies of these

women, so that they shall bring this higher education into line with the lower grade schools for girls, both public and private; it will also do much to make a sphere not only for the education itself, but for the girl-graduates who are yearly sent out into the world as educated women. The new education means the creation for women of fresh and large opportunities of usefulness. It means that they are to find their place for greater services to society. It means, not that the domestic duties are to be superseded, but that women throughout the country are to bring their culture more and more into daily life, and help to renew society at its sources. Their notable achievements in scholarly directions are well in their way, but this represents only one of the many lines in which the education of bright women is to affect American society. The higher education is not to unsex women or to render them incapable of taking their places in the life of the family; its tendency is to so broaden their sphere and open to them avenues of usefulness that the whole of society shall feel the benefit of the training which they are now receiving, and are destined to receive in still larger degree in the future.—*The Boston Herald.*

MORALITY AS A QUALIFICATION OF THE TEACHER.

IT is a matter of legal enactment that the teacher must be a moral man—he is required to have a "good moral character." Though this requirement is evaded in many cases, the public expects morality as a qualification of the teacher. What gives morality to the teacher? What increases moral force and power in the teacher?

Morality includes religion; the greater always includes the less. Hence, the teacher must be a religious man. It is not asserted that he should be a member of any particular sect, or in fact any sect at all; though, as a matter of fact, a man who is a member of an organization that makes its object the culture of its members in morality and religion is far more likely to be a better man than one who is not. A man without religion must be one who cannot admit that the Creator of this wonderful world is entitled to reverence and love. The most degraded nations endeavour in various ways to express this; their attempts show that the human heart is religious by nature. In this civilized land, the teacher, we repeat, must be religious. There must be in his heart a deep reverence for the Father of his spirit, and an earnest longing to be like him, a conscientious obedience of the commands he has made.

In his daily work the teacher will see and feel his need of the deepest religious culture. We do not counsel the teacher to pray with his pupils or not to do so, that is settled by the surroundings; what we want to impress on the teacher is that he needs to pray for himself. In a little village in Ohio many years ago some discouraged ministers met to discuss the needs of the sparsely settled country. They turned to the eldest one present, a white-haired man, and said, "What shall we do?" He looked up, paused a moment and then said, "Let us pray." Let the teacher make his own fitness for the tasks before him a subject of daily and hourly prayer. More teachers fail from spiritual weakness than from ignorance of branches of knowledge they are teaching.

In a school in western New York there was several years ago a lady in charge of a very large department and whose influence was unbounded. One of the trustees of the school often used to refer to her wonderful influence and say, "Yet she only weighs ninety pounds." She was the daughter of Quaker parents, and declared to her pupils the old Quaker doctrine (that Socrates had long ago announced) that there is a spiritual influence that will come to one if he makes room for it. It was her spiritual power that enabled her to work what seemed to be wonders to on-lookers.

Let no teacher neglect the counsel to pray for spiritual help in his important work. Ajax, the heathen, put up the prayer "Only give me light, Father Jupiter;" and will the Christian teacher do less? In the school-room it is spirit battling with spirit; once it was the stronger body that was the superior, now it is the stronger spirit that rules. How else can the teacher replenish the spiritual waste so well as by praying? A spiritual power he must be or he is no teacher—no former of character. The new phase of education before the public is really the outcome of the perception that the teacher is a spiritual force.

And finally, the man with a spiritual side to his mind will know more of any branch of knowledge and teach it better than one who has neglected thus to perfect his nature. The noblest character in the world, the men who are doing the most in the world, are men who employ the force that comes from enlarged spiritual natures.—*School Journal, N. Y.*

THE PRACTICAL GAIN OF ORIENTAL STUDIES.

IT is a remarkable fact that at the present time, when the popular clamour is strongest against the traditional prominence of the study of Latin and Greek in the colleges, the popular interest in the study of the Hebrew, the Arabic, the Assyrian, the Ethiopic and the Egyptian languages is greater than ever before. While many are claiming that it is a waste of time for an American student to devote himself to the dead languages of Greece and Rome, American students in unprecedented numbers are entering upon the study of languages which were in decay before the languages of Greece or Rome had attained to the pre-eminence which, in turn, they occupied in the literature of the world. Even if the precise reason for this state of things be not evident, it is easy to see that there is a practical gain to the cause of truth, and to the interests of Christianity, in this revival of study in the realm of early Oriental language and literature.

The strongest claim in defence of the traditional place of Latin and Greek in the college curriculum is that these languages open to the student the choicest literature of the world, with its rare treasures of history and biography, and that they give him a familiarity with the basis of the leading modern languages—including his own. In this view of the case no student can be well furnished for all other important study, and for a right view of the world's life, without a knowledge of these dead languages. A claim of corresponding strength in behalf of the study of the earlier Oriental languages is that they open to the student a field of literature and of history which enables him to see for himself the truer basis of the

world's life; and that they furnish him with a knowledge which is essential to a right understanding of themes of current discussion, which involve in *their* issue all that is dearest and most valuable for the life that is, and for the life that is to be. In fact, the field of Oriental scholarship is to-day earth's great battle-field between truth and error; and the champions of truth in that conflict cannot be fully furnished for their mission without a knowledge of the languages represented there.

The Bible is at the foundation of Christianity. It is at the foundation, moreover, of all civil and religious liberty. On its teachings rest all the trustworthy safeguards of social order and progress, and of personal morality. To destroy belief in the Bible as the inspired record of God's revelation to man is an aim of the chief enemies of society, and of the chief enemies of virtue. To confirm belief in the Bible as an authoritative rule of faith and practice is the desire of the truest lovers of God and of their fellows in all the foremost lands of Christian civilization. Scientific and critical research is a matter of interest to both the friends and the enemies of the Bible. Its results will, in the end, have their influence in shaping the world's opinions concerning the truth or the falsity of the Bible record. In both departments of research — scientific and critical—the Old Testament, rather than the New, is the centre of present conflict; and no open questions of New Testament research are now so vital to the main issue of the Bible's trustworthiness as are the questions concerning the Old Testament record, which are in wide popular discussion to-day.

A few years ago, the state of the case was very different. The sharpest assaults on the integrity of the Bible record were then making against the New Testament story. The specious theories of Strauss and Renan and Baur, and their followers, as to the authorship and composition and teachings of the New Testament writings, had caused timid minds to tremble, and were a source of no small perplexity even to Christian scholars who had no serious doubt as to the ultimate issue of the newly provoked conflict. For a third of a century the discussion went on. The story of the historic Christ was scanned and sifted as never before. All the apostolic literature was mercilessly subjected to the closest and keenest criticism. As a result, the historic correctness of the gospel story, and the historic verity of the apostolic writings, were newly established by proofs indubitable. Strauss and Renan and Baur are no longer counted formidable opponents of the evangelical faith. Their writings have chief value as the record of exploded errors. New Testament criticism is now chiefly confined to questions in the text itself. There is hardly any opposition to this text from without that is worthy of a scholar's attention.

But *now* the Old Testament is under a searching examination. Its age, its authorship, its composition, its facts, its teachings, are all called seriously in question. The language, the scientific and historic statements and the internal evidence of authorship in the Old Testament text are alike matters of scholarly and popular criticism, in the old world and in the new. Timid Christian souls are again in a tremble; and the strongest Christian minds realize that the conflict in progress is a serious one. Those who are sure that the Old Testament will come out of this conflict as triumphantly as the New Testament came out of the other are by no means blinded to the fact that the conflict of conflicts just now is over the Old Testament, and not over the New. The New Testament rests on

the Old. If the Old Testament could be shown to be untrustworthy, the principal basis of the New Testament would be taken away. For Christian scholars to ignore the present assaults on the Old Testament, because of their larger personal interest in the New, would be as unwise as the ignoring, by the inmates of a beleaguered castle, of the work of the enemies' sappers and miners at the castle's foundation, because of the inmates' larger interest in the battlements and turrets above.

The apologetic defence of Christianity to-day pivots on a right conception of current questions in the realm of Old Testament scholarship. A right understanding of those questions themselves is possible only through the results of special Oriental research. To promote the intelligent study of the Oriental language and literature among students and teachers of the Bible is therefore the unmistakable duty of every lover of the Bible, and every friend of truth and virtue. In fact, there is no branch of human study which to-day involves larger and more important practical results to society and to the individual, all the world over, than intelligent study by competent scholars in the field of Oriental research.

And the sound sense of the Christian community recognizes this truth as if by instinct. Old Testament study and Oriental research are more prominent even among our practically minded Americans than at any former time in our history, in addition to the still larger prominence of such study in England and Germany. No longer is Oriental study among us limited to Hebrew; nor is that now confined to a perfunctory course in the theological seminary. The colleges and universities are adding Hebrew and Arabic and Assyrian and Ethiopic and Egyptian to their elective courses of study; with eminent specialists assigned to chairs of instruction accordingly. And here, again, is Professor W. R. Harper conducting a Correspondence School of Hebrew all the year through, with a membership of from five hundred to a thousand at a time; while for recreation he travels over the country, in vacation season, to take the lead in Summer Schools of Oriental Study at various centres of population and influence. Both scholarly and popular books in the field of Oriental research and of Old Testament criticism multiply in every direction; while periodical literature and spoken addresses in the same realm of knowledge are alike newly prominent far and near. And now all the Sunday schools of America are to enter together upon the study of the Pentateuch, at the opening of the new year, with such helps as were never before given to the intelligent understanding of that portion of the Bible, and to the clearer comprehension of the points in the text which are in fresh and vigorous discussion.

Out of all this conflict of discussion good is sure to come. That which is true will only be confirmed by the fullest research. That which is error ought to be shown to be error. Those who are confident that the Bible is God's unique revelation to man have no fear that it will fail or suffer under the severest criticism to which it can be subjected at the hands of man. But that a conflict at this point *is* in progress is not to be denied. Nor can it fairly be questioned that the chiefest champions of Christianity in *this* conflict are those Christian scholars who make intelligent use of the best results of Oriental research. Hence to bid them God-speed, and to aid them as we may in their good work in behalf of all that is dearest to us and to ours, is our practical duty of to-day.—*Sunday School Times.*

THE TWO TEACHERS.

I HAVE in mind two teachers who seemed to possess more than an ordinary degree of power, and yet it was not the same in each. The one, as far as I could discover, had the affection of every pupil. It was the delight of the children to grant every wish of the teacher, and they seemed to know her will as if by instinct. There was no law but the law of love —love for the teacher. There was no command, for all orders were mere requests. There was little talking, as the signals were all those which appealed to the sight rather than to the hearing. There was no feeling of fear or obligation; desire was the motive for all action. There was no emulation save that which was manifested in trying to see who was first to divine the teacher's will. There seemed to be just as much enjoyment in study as there was in play, for whether in study or at play, the pupils and teacher lived in each other's society, and they were alike happy. There was no friction in the machinery of government; indeed, there seemed to be no machinery either of government or of teaching. I looked in vain for a fault; I asked myself the question, Is this the perfection of school management? Is this personal influence of a lovable character the greatest gift that could be bestowed upon these children in the name of teacher? Granting that progress was made in the studies, about which there was no question, was anything else demanded? Was anything less demanded, or was this heart-power formed for a noble purpose? I wonder if human sympathy is any the less sacred when expended on children struggling up through the trials of the school-room, which are to them as real as any they will ever meet in life? I wonder if divine sympathy was any less divine because it was extended to a race struggling with ignorance and sin? Does the true teacher ever feel that it costs too much to educate children when done at the expense of all the nerve-force at his command?

I have said that that the power which the other teacher applied was different. I think the method which which he employed was more complicated and more difficult. I think the results were not so immediate. I think he had more opposition in establishing his authority, at least from a portion of his pupils; but he was supported by the community. His rule was not tyrannical, for it was just. Every requirement in the school-room rested upon moral obligation. The pupils were treated as if they were expected to do what was right from a sense of duty. The law of the school seemed to be cast in the mould of absolute right. When wrong appeared it was opposed by a mighty sentiment, and the most natural penalty was inflicted. The pupils had confidence that they would be dealt with in strictest justice, and were not afraid to be truthful and honest, nor were they afraid of pain, though they knew what it meant. I believe the mere wish of the teacher was rarely a motive for a pupil's act.

Teacher and pupils seemed to be aiming at one common object, to build up and fortify a character that would stand any strain ever to be placed upon it. Instead of seeking for sympathy, each one sought to cultivate self-reliance, which made progress sure and easy; and it was not without pleasure, for the truest

pleasure comes from a consciousness of personal victories gained over obstacles. There were dignity of conduct, respect for law and order, regard for the rights of others, and loyalty to the school; but the feeling which the pupils had toward the teacher must be called esteem and not love; and they cheerfully granted him their highest esteem, for they felt that he had shown them how to be true and strong and brave. They were conscious of the existence of a strong government over them, but its laws were directed to the thought and feeling rather than to the outward act; and the teacher seemed to be as much the subject of these laws as the pupils. The Golden Rule was familiar to all, and was applied in the settlement of the most complicated questions of discipline. Again I asked myself the question, Is this the perfection of school management? Will these young people pass beyond the limits of the school-room regulations with the same loyalty to principle that characterized them as pupils? Could there be any greater security to this end than the privilege of coming under the personal influence of such a teacher? Will the strength of purpose, the devotion to truth, the vigorous thought, the noble courage and self reliance developed under such a system of school government, compensate for the loss of the mere imaginary privilege of dictating the terms of an education, under the impression that the learning of some things will enable one to get along in life with a little less labour than the learning of others? You have already anticipated my answer.

These teachers were both invaluable in their proper places; the one, adapted to the tender years of childhood, the other to the more advanced age, when the boys and girls were beginning to assert their rights and manifest their own individuality. They both wielded irresistible power; the one, that of love, the other, that of moral obligation. Both of these principles are indispensable to the work of training our boys and girls for the responsible years to come.

Thus is crowned the teacher, standing above all books and studies and school-room exercises, dispensing the power to be applied in the progress of the future, as well as of the present.—*Ohio Educational Monthly.*

PROF. DUPUIS' ADDRESS.

THE address delivered by Professor Dupuis in Convocation Hall on University Day was so breezy as well as thoughtful, that the CANADA EDUCATIONAL MONTHLY is republishing it in full in its December and January issues. Everything that Professor Dupuis writes on Educational Matters is worthy of attention, not only because of his independent tone and his determination to get to principles, but because of his wide and long experience. He has been a teacher all his life, and has taught in the Public and High Schools as well as in a Medical College and the University. He has been Inspector of schools, President of the County Association of Teachers, Member of the Central Committee, and lastly Secretary of the Board of Matriculation Examiners for Queen's, Victoria and Trinity. On no subject is he so well entitled to be heard as on the teaching of Science, for he himself taught Chemistry and Natural History for a far longer time than he has taught Mathematics, and both as a

lecturer and experimenter competent authorities who have sat at the feet of Huxley and Tyndall put him on the same level with those magnates. On this subject his conclusions are the same as those which the Philosophical Faculty of Berlin came to after a careful and extensive induction of instances. He believes that the time given to the teaching of Science in High Schools is almost wasted, at any rate "that the ultimate benefit to the country of the school which gives much of its time to Science will be less than that of the school which confines itself mainly to Classics, Mathematics and English." He gives reasons, that will appear to most minds conclusive, for believing that the old disciplines are the best for mental training, and that the student who lays a broad foundation of Literature and Mathematics will be able to build thereupon the best Science superstructure. With regard to the candidates who presented themselves for Matriculation last June, his testimony is that their knowledge of Science was "mostly of the parrot kind. Where the question could be answered by the statement of a fact, the answer was generally forthcoming. But where the question required a deeper insight into underlying principles, the answers were given in a very uncertain voice, and were generally nonsensical or astray." — What do "the practical men" say to all this heresy?—*Queen's College Journal.*

THE GOOD QUESTIONER.

1. He is a teacher, not a mere examiner. He questions for the purpose of imparting knowledge, not merely for finding out what the pupil knows.

2. He asks his questions in the order in which a subject should be investigated, making his pupils for the time searchers after truth, and himself their leader and guide.

3. He knows the mind, the order of its growth and the method of its thought, and he adapts his work to it.

4. He exercises all the faculties of the mind, and asks the very questions necessary to develop and strengthen them.

5. He asks few questions. He chooses carefully his words. Every sentence means something, and every word is the right one.

6. He wastes no time in delays, but pushes his inquiries with a good degree of rapidity, and keeps up the heat of intellectual life by rapid and sharp blows.

7. He knows what he wants, and drives straight for it. He allows no side issues or irrelevant questions to throw him off his track.

8. He leads his pupils to the mountains of knowledge, where they can see truths they never saw before. He shows them new views of subjects, so that they are often astonished and delighted.

9. He never questions for the purpose of displaying his own knowledge, but keeps himself in the background, and the truth in the forefront. When he is through, his pupils think of what they have been taught, and not of the teacher.

10. He is an enthusiast. He believes in himself enough to give him the confidence necessary to secure his success.

11. He never leaves his subject until a definite, clear, concise and conclusive result is reached. This is kept as a valuable addition to knowledge. He leaves nothing at loose ends.—*Pa. School Journal.*

CORRESPONDENCE.

To the Editor of THE MONTHLY:

SIR,—Our school work is still in its childhood, but everything has unlimited possibilities in this great land. The country between the south and north branches of the Great Saskatchewan is very rolling and full of ponds. The soil is as good as could be desired. The grasses are especially rich. Cattle and sheep thrive here better than even in Manitoba. All we want in order to extend the stock business is a market, and we look with eager desire towards the great natural outlet of this vast territory (the Hudson's Bay) to procure us this. Then let the millions of men and money that are congested in the capitals of the old world have vent and circulate here where there is lots of room.

Our educational machinery in the territories is very primitive, but will not long remain so, as most of the settlers are anxious to have it raised to as high a status as they have been accustomed to in the older settled parts of the Dominion, or the Mother Country. The council which has charge of educational matters has a considerable amount of money at its disposal from the Dominion Government, and they are liberal in their aid to the schools. The modes of ingress to Prince Albert are two in summer, by steamer from Selkirk on Red River over Lake Winnipeg and up the Saskatchewan, with only one transhipment at Grand Rapids at the mouth of the Saskatchewan. Owing to the lowness of the water and sand bars, this is a very slow and uncertain route except for a very short period, about June or July. We were three weeks between Selkirk and Prince Albert. The other route which, though more laborious, is quicker and, to most people in this rushing age, preferable, takes about a week from Qu'Appelle. It is pleasant in good weather, which is the rule in the North-West. Our Indians here are partly Cree and partly Sioux. Most of the Crees are out at Mistawassis and other Reserves, north of the river about sixty miles. The Sioux hang round the town cutting wood and drawing water, washing, scrubbing, etc. They are naturally superior in size and courage to most other Indians, and are fairly industrious, especially the women. In winter they subsist largely on rabbits; when these fail times are very hard indeed. These Sioux are all heathen yet, not much to the credit of our churches. I have tried, as all my predecessors have tried, to secure some help for them, but so far our efforts have resulted in nothing; but we will not despair.

Thank you very much for EDUCATIONAL MONTHLY. Hope to send you something once in a while. Meanwhile, I am ever sincerely yours,

ALEX. CAMPBELL.

Prince Albert, N.-W. T., January 4th, 1887.

SOUND, light and electricity move respectively at the rates of 1,142 feet, 192,000 miles, and 288,000 miles per second.

TO rise from an easy place you must make it a hard place. It is working above inclination that counts.

EDITORIAL NOTES.

In regard to Professor Dupuis' address, published in the December and January Nos. of this Magazine, we commend the extract from the *Queen's College Journal*. The Journal is a good representative of what a college paper should be.

The friends of the late Chief Superintendent of Education, the Rev. Dr. Ryerson, are wrestling with the question of providing ways and means to erect a suitable memorial to perpetuate his name to generations yet unborn. All intelligent teachers are firm friends of the "chief." The committee who have the matter in hand are in want of money. Will the educationists throughout the Province honour themselves by providing the sinews of war? Report results to Dr. Hodgins, or Mr. Walter S. Lee, Treasurer R. M. F., Church Street, Toronto.

"Of all things in the world, a steady reduction in the average rate of teachers' wages is the poorest incentive to professional zeal and efficiency, and holds out the least possible temptation to educated talent to enter upon the vocation, much less remain in it. Such a policy is suicidal, and no time should be lost in devising ways and means to counteract it. The question of annual revenues for the support of the common schools comes home so close to citizens and taxpayers all over the State, as well as to teachers and school-men generally, that we may safely leave it to the people themselves, when they get their eyes open to the situation as it is, to make their wishes and influence felt in their own way and in the right quarter. But it would be well for them not to go to sleep over it, or to delay action too long."—*Penn. School Journal.*

As regards salaries, the above sets forth the state of affairs in the long settled and wealthy State of Pennsylvania. In fourteen years there is a decrease of $5.00 per month in the pay of men, and $4.00 in that of women teaching in the public schools of this prosperous commonwealth. The Chief Superintendent urges on the people this self-evident proposition: that if they wish to have good teachers in the schools they must pay them a much larger salary—adequate pay for good work. There is no other way; but how is this to be brought about? Charge fees in the public schools, or have rate bills again?

THE BIBLE.

THIS magazine has for years past urged upon the country and the public schools the vital importance of having Scripture reading recognized as an integral part of the school programme. We commended the effort made and the success achieved by the Government, when the attitude of indifference, or worse than indifference, was changed for that of decision by issuing a positive order implying official recognition, so far as it went, of religious instruction in our schools. But, at the same time, we pointed out in unmistakable language, that a serious error had been committed in publishing a book of extracts for use in the schools of Ontario, instead of the Bible. Those of us who have had experience in Scripture reading, and have given instruction from the same in public

schools, are surprised at the queer difficulties and objections started by those who have had no experience in the work whereof they write so positively. And we are no less surprised at the depreciatory remarks indulged in as to the teachers' incompetency to select suitable portions for reading to and with the scholars. From one point of view, we regretted the hot discussion which arose over the Bible in the public schools; for our hope and expectation was that all the Protestants would have harmoniously joined together in having the rule of faith and manners read in all our schools by both pupils and teachers. But, on the other hand, it is far better that the controversy should have arisen, even to the putting aside party political alliances, than that men should feel so indifferent on the question as not to raise a voice in support of the precious volume which has been the treasure-house of our British Christian civilization. No other question could have moved the Province to such an extent; no other is sure to produce such radical changes. The simple way in this case is the cheapest and the best. Let the teachers have a list of passages for reading during the school year. This will save time to the teachers, and in other ways be helpful to them in their arduous work. But in preparing this calendar of readings by all means let the teachers be properly recognized.

THE TWO SEAS.

"When thou passest through the waters I will be with thee."

EACH night we are launched on a sea of sleep;
No doubts disturb us, no fears annoy.
Though we plough the waves of the darkened deep,
We know we are safe in the Master's keep,
And the morning brings us joy.

What dread, then, should daunt us, what doubt distress,
When on Death's dark sea we are launched alone?
In that deeper sleep, should we trust Him less?
Shall we limit to earth His power to bless?
Will the Father forsake His own?

He made us His children; He bears us to bed;
And whether our sleep be the first or last,
What matters it where our souls are led,
If our trust in the God of the living and dead
Should only hold us fast?

Chambers' Journal. J. B. S.

SCHOOL WORK.

MATHEMATICS.

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

UNIVERSITY OF TORONTO.

ANNUAL EXAMINATIONS, 1886.

Junior Matriculation.

ARTS—ALGEBRA—HONORS.

Examiner—J. W. Reid, B.A.

5. If $A \propto B$ when C is invariable, and $A \propto C$ when B is invariable, then will $A \propto BC$ both B and C are invariable.

The value of diamonds varies as the square of their weights, and square of the value of rubies varies as the cube of their weights; a diamond of a carats is worth m times a ruby of b carats, and both together are worth £c; find the value of a diamond and ruby, each weighing x carats.

5. See Todhnnter, Art. 425.

Let pa^2 = value of a diamond of a carats,

$qb^{\frac{3}{2}}$ = " ruby b "

$pa^2 = mqb^{\frac{3}{2}}$ and $pa^2 + qb^{\frac{3}{2}} = c$, whence

$p = \frac{mc}{a^2(1+m)}$, and $q = \frac{c}{b^{\frac{3}{2}}(1+m)}$;

$\therefore$ value required is $\frac{mcx^{\frac{3}{2}}}{a^{\frac{3}{2}}(m+1)} + \frac{cx^{\frac{3}{2}}}{b^{\frac{3}{2}}(m+1)}$

6. Insert n arithmetical means between two given terms a and b.

There are n arithmetical terms between 1 and 31, such that the 7th mean : $(n-1)^{th}$ mean $= 5:9$; find n.

If a, b, c be the p^{th}, q^{th}, r^{th} terms respectively of an arithmetic series; show that

$$a(q-r)+b(r-p)+c(p-q)=0.$$

6. (1) Text book.

(2) Let d = common difference,

$$1+(n+1)d. \quad 31 \; ; \; \therefore \; d=\frac{30}{n+1} \; ;$$

also $1+7d : 1+(n-1)d :: 5 : 9$.

From these equations $n=14$.

Let $m=$1st term, and we have the equations $m+(p-1)d=a$, $m+(q-1)d=b$,

$$m+(r-1)d=c$$

(2) − (3) gives $d(q-r)=b-c$,

(3) − (1) " $d(r-p)=c-a$,

(1) − (2) " $d(p-q)=a-b$.

Multiplying these three equations by a, b and c respectively, and adding

$$d\{a(q-r)+b(r-p)+c(p-q)\}=0,$$

as d is not zero, $a(q-r)+b(r-p)+c(p-q)=0$.

7. Find the sum of a given number of quantities in Geometrical Progression, the first term, and the common ratio being supposed known. Find also the sum of the same series to infinity.

If P be the continued product of n quantities in Geometrical Progression, S their sum, and S_1 the sum of their reciprocals; show that $P^2=\left(\frac{S}{S_1}\right)^n$

7. (1) Text book.

(2) $P=a \cdot ar \cdot ar \cdot \ldots \cdot ar^{n-1}=a^n r^{\frac{1}{2}n(n-1)}$

$P^2=a^{2n}r^{n(n-1)}$

$$S=\frac{a(r^n-1)}{r-1},$$

$$S_1=\frac{\frac{1}{a}\left\{\left(\frac{1}{r}\right)^n-1\right\}}{\frac{1}{r}-1}=\frac{1-r^n}{ar^{n-1}(1-r)}$$

$$\left(\frac{S}{S_1}\right)^n=(a^2r^{n-1})^n=a^{2n}r^{n(n-1)}=P^2.$$

8. Given M and N the m^{th}, and n^{th} terms of a Harmonical Progression; find the $(m+n)^{th}$ term.

The sum of three numbers in Harmonical Progression is 26, and the product of the extremes exceeds the square of the mean by the mean, find the numbers.

8. (1) Let a be the first term of the series inverted, d the common difference

$$a+(m-1)d=\frac{1}{M}, \; a+(n-1)d=\frac{1}{N},$$

$$d \quad \frac{N-M}{MN(m-n)}.$$

The $(m+n)^{th}$ term of this series is

$$a+(m+n-1)d=\frac{1}{M}+nd=\frac{mN-nM}{MN(m-n)} \; ;$$

$\therefore$ the $(m+n)^{th}$ term of the H. series

$$\frac{MN(m-n)}{mN-nM}.$$

(2) Let x, y and z be the three nos. in H P,

$$y=\frac{2xz}{x+z}, \; x+y+z=26, \; xz=y^2+y.$$

From (1) + (2) − (3) $x+z=\frac{2(y^2+y)}{y}=26-y$

whence $x=6$, $y=8$, $z=12$.

9. Find the number of permutations of n things taken r at time.

Given m things of one kind, and n things of another kind, find the number of permutations that can be formed containing r of the first and s of the second.

9 See Todhunter, Art. 490 and problem 17, in the exercises immediately following.

10. Assuming the Binomial Theorem for positive integral indices, prove it for fractional and negative indices.

Show that $\left(\frac{1+2x}{1+x}\right)^n$

$$=1+n\left(\frac{x}{1+2x}\right)+\frac{n(n+1)}{1.2}\cdot\left(\frac{x}{1+2x}\right)^2+\text{etc.}$$

Find the greatest term in the expansion of

$$\left(1+\frac{5}{6}\right)^{\frac{3}{2}}$$

10. $\left(\frac{1+2x}{1+x}\right)^n=\left(\frac{1+x}{1+2x}\right)^{-n}$

$$=\left\{1-\frac{x}{1+2x}\right\}^{-n}=1+n\left(\frac{x}{1+2x}\right)+$$

(2) The 2nd.

MODERN LANGUAGES.

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

EXERCISES IN ENGLISH.

1. Classify the phrases in the following according to their grammatical equivalence, and tell the relation of each:

(*a*) Opening the door of the shop he called to the boys that were standing on the other side of the street watching the fire.

(*b*) After hearing their statements he decided that it was unnecessary to call any more witnesses.

(*c*) To prove the truth of this charge, I ask your permission to read some extracts from a letter found in his possession at the time of his arrest.

2. Expand into complex or compound sentences:

(*a*) It possesses many commendable features.

(*b*) I warned him of the probable consequences.

(*c*) To make sure, I watched him enter the house.

(*d*) Calling them together, he explained the position of matters.

(*e*) For fear of recognition, he changed his clothes.

(*f*) The heavy rain during the night had rendered the roads impassable.

(*g*) On entering the room they were filled with awe.

(*h*) It is no longer possible to believe in his innocence.

(*i*) Notwithstanding his many failures he never lost heart.

(*j*) They would have been glad of an opportunity to do so.

3. Classify the words in the following, giving your reason in each case:

(*a*) The boy stood on the burning deck,
Whence all but him had fled.

(*b*) The children coming home from school
Look in at the open door.

4. Select the inflected words from the following, and give all the inflected forms that each may take:

(*a*) Around the fire that wintry night
The farmer's rosy children sat.

(*b*) There is a reaper, whose name is Death,
And with his sickle keen
He reaps the bearded grain at a breath,
And the flowers that grow between.

5. Classify the subordinate clauses in the following, giving your reason in each case:

(*a*) A time *there* was, ere England's grief began,
When every rood of ground maintained its man.

(*b*) Then Denmark blessed our chief
That he gave her *wounds repose*.

(*c*) But *what* they killed each other for,
I could not well make *out*.

(*d*) And the mother gave, in tears and pain,
The flowers she *most did love*.

(*e*) Breathes there a man, with soul so dead,
Who never to himself *hath said*,
This is my own, my native *land!*
Whose heart hath ne'er within him burned,
As *home* his footsteps he hath turned,
From *wandering* on a foreign strand?

6. Parse the italicized words in 5.

7. Analyze the last three lines of the following, giving your reason for the disposal of each part:

No scratch had he nor harm, nor dread,
But the same couch beneath
Lay a great wolf all torn and dead,
Tremendous still in death.

8. Give examples to show that each of the following may be used with different grammatical values:

(*a*) Daily, (*b*) copper, (*c*) to see me, (*d*) in the garden, (*e*) where you got it, (*f*) who owns the house.

9. Show that the italicized word, phrase, and clause in the following have two values, a grammatical and a logical:

(*a*) No *honest* man would have done it.

(*b*) *Alarmed by these reports*, they abandoned the fort.

(*c*) I blame you, *who might have prevented the trouble*.

FRENCH.

[The following exercises might be used with advantage, either as a test or as a means of impressing upon the mind of the pupil, grammatical or idiomatic points. The French phrase given affords a hint to the construction required for the English sen-

tences in the paragraph—only a hint, however, as in many cases distinctions have to be made.—ED.]

Pendant que—Whilst you were there. Whilst he slept. During the time we are away.

Au printemps—If the flowers freeze in spring, there will be no fruits in summer. In winter. In autumn.

Elle se mit à pleurer.—Don't begin to cry. He began to sing. I began to work. She had begun to sing.

Il fit mûrir les grains.—The heat of the sun causes the fruits to ripen. An intense cold makes the water freeze. This made the stalk bend down. Make him do it. Make her go.

A l'âge de six ans—When I was only nine. When he was only ten years old. When he was sixty years old.

Combien il avait payé cet amusement.—How much did you pay for that book? I have paid too much for it. He paid two francs for it. Who paid for the cab? I paid a franc for this newspaper.

Il aurait dû payer.—I ought to have said it. Ought I to have done it? You should have bought it. He ought to do it. You ought to go. They must go.

Ayant eu besoin de—I want several things. What are you in need of? I don't want anything. I want you.

Tout neufs—She was quite surprised. This is quite old. These books are quite new. This dress is quite new.

Ne m'ôtez pas votre confiance.—I took it away from them. Don't take away your confidence from him. Take away that book from him.

Pour la première fois—I see you for the first time. How many times a week? Several times a day. Twice a month. Three times a year.

Ce fruit ne se mange pas.—This is not found everywhere. These plants are only found in the Alps. These books are not sold in England. Where are those pens made? These roots are called by another name. This is formed in the earth.

Dans de grands sacs—I have some wine. I have no wine. I have some good wine. I have a great quantity of wine. Some meat. Some good meat. Some cold meat. He had some apples. We have some big apples. They had no apples. They had plenty of apples.

Le monde ressemble à un champ.—The plant is like a rose-tree. What is it like? Your uncle is very like your father. My brother is not at all like me.

S'être habitué—I soon accustomed myself to it. You will soon get used to it. He soon got into the way of going every day to the same place. How long does it take to get used to it?

J'avais six ans.—How old were you at that time? My sister was only nine years old when she died. How old was your father? He was the same age as their father.

SCIENCE.

HOW LIGHTNING IS KINDLED.—The observations of meteorologists show that the vapour which ascends in an invisible state from the ground carries with it, in calm and fine weather, into the higher regions of the air, a very considerable supply of positive electricity. Each minute vapour-particle that goes up bears its own portion of the load. When, however, the invisible vapour has thus mounted into very high regions of the air it loses its invisibility, and is condensed into visible mist, as has already been explained in detail. Numerous particles of the aqueous substance are drawn together, and grouped into the form of littls vesicles or globules. Each one of these is then a reservoir or receptacle of electric force, and as more and more watery vesicles are condensed more and more electricity is collected in the gathering mist; but each of the water-globules is still enveloped by a space of clear air. In a drifting cloud the mist-specks can be discerned floating along with transparent intervals between. The clear air which lies around the globules of vapour then acts as an insulating investment; it imprisons its own part of the acquired electrical force in each separate globule. The cloud is thus

not charged as a whole, like a continuous mass of metal, with its electricity spread upon its outer surface. It is interpenetrated everywhere with the force. It is composed of a myriad of electrified specks, each having its own particular share of the electric force, and each acting as a centre of electrical energy on its own account. The electricity which at any one instant resides in the outer surface of a cloud is, therefore, but a comparatively small portion of that which is present in the entire vapourous mass. That such is the way in which electricity is stored in the clouds has been proved by direct observation. When a gold-leaf electrometer is placed in the midst of a cloud driven along by the wind, it is seen that the strips of gold-leaf continually diverge and collapse as the mass of the cloud passes along. There is an electrical charge acting in all parts, but the charge varies in intensity from place to place accordingly as there is a greater or less condensation of the particles of vapour in each particular spot. But the influence externally exerted by the cloud is nevertheless capable of being raised to a very intense degree, because it is, so to speak, the sum total or outcome of the force contained in the innumerable internal centres of energy. It is no uncommon thing for the electrical force emanating from a cloud to make itself felt in attractions and repulsions many miles away. Clouds resting upon the remote horizon thus frequently produce perceptible effects at distances from which the clouds themselves cannot be seen. An electrical cloud hanging a mile above the ground acts inductively upon that ground with considerable power. When in summer time the temperature of the earth's surface is very high, the ground moist, the air calm, and the sky clear, very copious supplies of vapour are steamed up from the ground under the hot sunshine. Clouds, however, begin at length to gather in elevated regions of the air out of the abundance of the supply. The free electricity which has been carried up with the vapour is at first pretty evenly spread through the clouds; but after a time, as the electrical charge becomes more and more intense, a powerful repulsive force is in the end established between the spherules of the mist, and a very high degree of tension is at last produced at the outer surface of the cloud, where it is enveloped by insulating air, until in the end the expansive energy there becomes strong enough to occasion an outburst from the cloud. The escape of the redundant charge then appears to an observer's eye as a flash of lightning issuing from the cloud. Such, in its simplest form, is the way in which lightning is kindled in the storm-cloud.—*Science Monthly.*

CLASS-ROOM.

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

COMPOSITION.

I. Change into prose:

"Vice is a monster of so frightful mien,
As, to be hated, needs but to be seen;
Yet seen too oft, familiar with her face,
We first endure, then pity, then embrace."
—*Pope.*

II. (*a*) Explain the difference between direct and indirect quotations.

(*b*) Change the form of the following:

(1) "Holloa!" he says, in a loud, cheerful voice. "What! benighted, youngster!" "O! is it you, Mr. D——?" says the boy; "No, I am not benighted; or, at any rate, I know my way out of the wood."

(2) In there came old Alice the nurse,
Said, "Who was this that went from thee?"
"It was my cousin," said Lady Clare,
"To-morrow he weds with me."
—*Tennyson.*

III. Compose a sentence, using the following words and phrases:

Study of history, commended, men of thought, examine, learning, such, importance, warmly, since, let us, reasons, giving, assigned, by them.

IV. (*a*) Combine the following elements so as to form a complex sentence:

Harold was king of England. He had a brother. The brother was a rebel. He was in Flanders. He was a vassal of Hardrada. Hardrada was king of Norway.

(*b*) Form a simple sentence from the following elements:

Several gentlemen were at Garden River. They represented lumber firms. These firms operate at Chicago. These gentlemen were looking after timber limits in that vicinity. They were there last week. They came with a view to opening up a large lumbering camp there.

V. (*a*) Write an advertisement for "Teacher Wanted."

(*b*) Correct the following:

(1) Teacher wanted holding a third class certificate for senor townships of Coffin coffin additional and plummer [three townships] in algoma district duties to begin first january 1887 apply stating salary to ——

(2) Those which endure the torturing pangs of nuralagy, rhumatiz, scyatika, lumbago and similiar familiar paneful complaints are severely tried, but there is a speedy releif for all pane and lamness in hagards yellow oil.

VI. Write sentences illustrating the difference in application between:

Mean and mien; chagrin and shagreen; canvas and canvass; time and thyme; sweet and suite; stationary and stationery.

DICTATION.

I. Write the following:

Elocutionary, ellipsis, preceding, anglicized, gum Arabic, masonry, escutcheon, silicious, cæsura, antithetical. Apocalypse, parenthetical, recurrence, sibilant, glycerine, rhetorical, intervening, rhythmical, persistently, colloquial.

II. Geographical names:

Acadialite, Ailsa Craig, Cobourg, Ingersoll, Maganatewan, Merritton, Michipicoten, Sault Ste. Marie, Stouffville, Waubaushene.

III. Correct the following words where necessary:

Abutal, abutment, abettor, abridgment, billious, bicycle, eucre, skilfully, membraneous, vanering.

GEOGRAPHY.

I. Explain:

(*a*) Why it is colder in winter than in summer?

(*b*) The cause of winds.

(*c*) The benefits arising from winds.

II. (*a*) How is the soil of a river valley formed?

(*b*) How does the soil near the mountains differ from that in the delta?

(*c*) Illustrate your answers by any familiar examples.

III. Name the provinces in the Dominion of Canada, giving in reference to each

(*a*) The population;

(*b*) The capital;

(*c*) The chief mineral deposits;

(*d*) The chief exports.

IV. Mention the "five great powers" of Europe, and show clearly whether this greatness, as it is generally spoken of, is to be attributed to natural resources, or political reformations, or both combined.

V. A vessel sails from Port Arthur to Halifax, name

(*a*) The waters passed through;

(*b*) The islands passed by;

(*c*) The distance gone.

VI. (*a*) Describe the physical features, climate and exports of Australia.

(*b*) Give the colonies of Australia with the capital of each.

VII. From what countries do we chiefly obtain the following:

Iron, cotton, sugar, opium, silk, furs, tin, currants, pine apples, cochineal?

VIII Where, what, and for what noted are:

Solferino, Sheffield, St. Domingo, Elsinore, Batoche, Bulgaria, El Obeid, Staffa, Father Point, Valentia.

GRAMMAR.

I. (*a*) Analyze fully.

(*b*) Parse.

For when we're there, although 'tis fair,
'Twill be another Yarrow.

II. (*a*) Explain the difference between gender and sex.

(*b*) Give a list of feminine suffixes with examples.

(*c*) Explain how nouns now ending in 'ster, indicate a different sex from what they did formerly.

(*d*) "The form of the word denoting the

female sex is obtained from the form denoting the male sex."

Show by examples that this is not always true.

III. Define the term "Inflection."

According to your definition justify the following generally accepted "Inflections."

(*a*) Gender; (*b*) Adverbial comparison of adjectives; (*c*) Voice, mood and tense as applied to verbs.

IV. (*a*) Explain clearly the two ways in which adjectives are used.

(*b*) Show the exact difference in meaning between these two ways by means of examples.

V. Construct sentences to show that each of the following may be used as different parts of speech:

What, but, as, sailing, after, which.

VI. (*a*) Give the principal parts of:

Lie, bear, spit, work, wend, lose.

(*b*) Write out the first person in both numbers of all the imperfect tenses of the indicative mood of the verb "show."

VIII. Correct, or improve, the construction of the following, where necessary, giving your reason for each change:

(*a*) Six weeks to Christmas only.

(*b*) Gore Bay correspondence sticks by the way to this office.

(*c*) She was willing to leave the talking to others for which she has no time.

(*d*) I propose to give you a punishment.

(*e*) Surely the fine weather of the past week is an indication of Indian summer.

(*f*) Dock or no dock? that is the question of interest for this village above all others this winter.

(*g*) How far did you say it was from Owen Sound to the Sault?

VIII. Give the various ways of enlarging a simple subject, with an example of each way mentioned.

HISTORY.

The Tudor Period.

I. State clearly the claims of the Tudors to the Throne of England.

II. Give a list of the Tudor monarchs, with the opening date of each reign and the leading feature of each reign.

III. Write brief notes upon the following:

(*a*) Star-chamber.

(*b*) Bloody Statute.

(*c*) Act of Supremacy.

(*d*) Poyning's Law.

IV. Briefly enumerate all the causes leading to the general advancement of the people under the Tudors.

V. Clearly show that the "Puritans" was synonymous with the "nonconformists."

VI. Give the chief steps taken in the Tudor period by

(*a*) The Protestants to destroy Catholicism in England.

(*b*) The Roman Catholics to destroy Protestantism.

VII. What is meant by politics, fiscal policy, public debt, federal union, customs duties, crown lands, debentures, dissolution of parliaments.

DERIVATIONS OF THE NAMES OF COLONIES, FOREIGN PLACES, ETC.

Albion, from "Alp" or "Alb," "the snowy range." Aristotle is said to have been the first to write of Britain under this name.

Alleghany, derived from the name of an Indian tribe rapidly becoming extinct.

America, from Amerigo Vespucci, a Florentine traveller, who is said to have inserted the words "Tierra de Amerigo," in a map published by him in the beginning of the 16th century.

Ascension Island, named after Ascension Day, the day of discovery.

Azores = "the island of hawks." Acor = hawk and es = island in the Portuguese.

Bab-el-Mandeb signifies the gate of tears.

Bermudas, discovered in 1522 by a Spaniard, Juan Bermudas, who happened to be wrecked on them.

Baltimore, named after Lord Baltimore, the patentee of the Colony of Maryland.

Bombay (Port), from Bona Bahia = "the Good Bay."

Brisbane, founded in 1823, named after a governor of this Australian Colony.

Britain is supposed to be derived from "Bri-etan-ia." Etan = country.

EDUCATION DEPARTMENT, ONTARIO.

DECEMBER EXAMINATION, 1886.

High School Entrance.

ARITHMETIC.

Examiners. { W. H. Ballard, M.A.
J. E. Hodgson, M.A.

NOTE.—Only 9 questions are to be attempted. A maximum of 5 marks may be allowed for neatness.

1. Simplify $\frac{1}{2} - \frac{3}{4}$ of $\frac{1}{8} + \frac{7}{8}$ and find how many times the result is contained in $\frac{3}{4} \div (\frac{7}{8}$ of $\frac{8}{14} - \frac{1}{2})$. [11.]

2. Divide the product of ·037 and ·0025 by the sum of ·9, ·02 and ·005. [11.]

3. If a road is four rods wide how many miles of it will make ten acres? [11.]

4. A lot 150 feet long and 100 feet wide is to be surrounded by a close board fence 6 feet high; what will the boards cost at $12.50 per thousand feet? [11.]

5. A farmer bought a number of horses and cows for $2,000. There were three times as many cows as horses and a horse cost twice as much as a cow. If each horse cost $80, how many cows did he buy. [11.]

6. A man has a salary of $400 a year and has $500 in the bank. If he spends $500 a year, in what time will his money be all gone? [11.]

7. What will a dollar amount to in 3 years 219 days at 7½ per cent. per annum? [11.]

8. A man borrows $900, for the use of which he has to pay $3 a month; how long will he have had it when the interest is 50c. on every dollar borrowed?

9. A dealer sold an article for $8.10 and lost 10 per cent.; at what selling price would he have gained 10 per cent.? [12.]

10. How can you tell, without actually dividing, whether a number can be divided by 9 without leaving a remainder? [12.]

11. If a cow gives 12 qts. 1 pt. of milk every day, and 1 lb. 8 oz. of butter can be made from 25 qts. of milk, how many lbs. of butter can be made in one week from the milk of 16 cows? [12.]

12. A man bought a quantity of tea supposed to be done up in packages of 1 lb. each, for which he was to pay $64; on weighing them, however, it was found that each package was 1 oz. too light—how much should he pay for the tea? [12.]

LITERATURE.

NOTE.—All candidates must take section A. A choice is allowed between sections B. and C., but candidates must confine themselves to the section they choose.

A maximum of five marks may be added for neatness.

A.

Scrooge *was better than his word.* . . . May that be truly said of us, and all of us!

1. Explain concisely the meaning of the italicized portions of the passage. [24.]

2. How had Scrooge been in the habit of treating Bob Cratchit? Refer to incidents mentioned in the previous part of the lesson in support of your answer. [5.]

3. "He knew how to keep Christmas well." What was his method of keeping Christmas? [5.]

4. What is the derivation of the word Christmas? What sort of feeling should the season inspire? Why? [6.]

5. How does Addison, in the *Vision of* Mirza, represent (*a*) the duration of human life, and (*b*) its cares and passions? [10.

B.

"I long wooed your daughter

. . . . . .

Our *fair* cousin with young Lochinvar."

6. Explain concisely the meaning of the italicized portions of the passage. [24.]

7. (*a*) "Love swells like the Solway, but ebbs like its tide." What object has Lochinvar in making this statement? [3.

(*b*) "With a smile on her lips and a tear in her eye." Account for the *smile* and the *tear*. [4.]

(*c*) "While her mother did fret and her father did fume." Would the sentiment be as natural if Scott had written, "While her father did fret and her mother did fume"? Give a reason for your answer. [5.]

(*d*) Account for the opinion of the bridemaidens, "'Twere better, etc." [4.]

(*e*) Point out the emphatic words in lines

2, 4, and 6. Give a reason in each case. [6.]

8. Quote a stanza of the poem, other than those printed above. [4.]

C.

In the ranks of the Austrian—
. . . . . .
If not in your ranks, by your hands!

6. Explain concisely the meaning of the italicized portions of the passage. [26.]

7. (*a*) "In the ranks of the Austrian you found him.;" Arrange the words in natural order. What is gained by the inverted order? [3.]

(*b*) "Let me die for our Italy, brothers." What is there to show that he died fighting *for* Italy, not *against* her? [5.]

(*c*) "He facing your guns with that smile." What smile? [2.]

(*d*) "If not in your ranks, by your hands." Supply the omitted words. [4.]

(*e*) Point out the emphatic words in lines 8, 9, and 20. Give a reason in each case. [6.]

8. Quote two stanzas of the poem, other than those printed above. [4.]

WRITING.

1. Write each of the following letters and combinations of letters three times:—

B, E, G, H, W, Z, br, thr, un, wr, fyg [8.]

2. Write the following passage:—

Xerxes, having lost in his last fight, together with 20,000 other soldiers and captains, two of his own brethren, began to doubt what inconvenience might befall him. [12.]

PRIMARY SCHOOLS (PHILADELPHIA).

TERM EXAMINATION, JUNE 16, 1886.

FIFTH GRADE—DRAWING.

1. Draw five horizontal lines, entirely across the paper, one-half inch apart. (Credits 0 to 15.)

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

2. Dictation—(*a*) Draw a vertical line four inches long. (*b*) One-eighth of an inch to the right draw another vertical line of same length and join their ends. (*c*) One inch to the right draw two like vertical lines and join their ends. (*d*) Divide the lines into eight equal parts. (*e*) Join the points of division by straight lines. (*f*) Accent the lines. (Credits 0 to 25—*a*, *b*, *c*, *d*, *e*, each 4 credits, *f* 5 credits.)

This exercise is to be drawn entirely freehand. No measurements are to be allowed. The dictation is *not* to be written on the board. The pupils will draw the figure but once. Give one step at a time and wait a reasonable time before proceeding with the next.

3. Place the cylinder upon the square prism, with the ends towards the pupils, and require them to draw an outline of the ends of these solids, actual size. Use the large solids. (Credits 0 to 25.)

This exercise is to be drawn entirely freehand. No measurements are to be allowed. The dimensions of the solids are not to be mentioned or suggested in any way.

4. Place a tumbler before the class, in an upright position, and require the pupils to draw an outline of it as it stands, actual size. (Credits 0 to 15.)

This exercise is to be drawn entirely freehand, and measurements are not to be allowed.

5. In an oblong four inches by two inches arrange straight and curved lines to form a design. (Credits 0 to 20.)

The oblong may be drawn with a rule. The curves and the straight lines forming the design must be drawn entirely freehand.

SIXTH GRADE—DRAWING.

1. On the left hand side of the paper draw five vertical lines the entire length of the paper, one-half inch apart. (Credits 0 to 15.)

This is to be done by the class simultaneously; the teacher counting one, two, three,

four, five, for the lines in succession with a sufficient pause between. But one trial to be allowed and no erasures.

2. Dictation—(*a*) Draw an oblong three inches by two inches resting on its longest side, the top being at least two inches below the top of the paper. (*b*) Divide the upper side into two equal parts, and from the point of division, draw a perpendicular line one and one-half inches high. (*c*) From the end of this line draw a line to each upper corner of the oblong. (*d*) Divide the base into two equal parts. (*e*) On each side of the point of division, one-half inch from it, place a point. (*f*) From these last points draw perpendicular lines one and one-quarter inches high. (*g*) Connect the ends of these lines by a curve bending upwards. (Credits 0 to 25—*a* 5, *b* and *c* 4 each, *d* and *e* two each, *f* 3, *g* 5.)

This exercise is to be drawn entirely free-hand. No measurements are to be allowed. The dictation is *not* to be written on the board. The pupils will draw the figure but once. Give one step at a time and wait a reasonable time before proceeding with the next.

3. Place the cylinder upon the square prism with the ends towards the pupils, and require them to draw an outline of the ends of the solids, actual size. Use the large solids. (Credits 0 to 25.)

This exercise is to be drawn entirely free-hand, and measurements are not to be allowed. The dimens. 3 of the solids are not to be mentioned or suggested in any way.

4. Place a tumbler before the class, in an inverted position, and require the pupils to draw an outline of it as it stands, actual size. (Credits 0 to 15.)

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

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

The squares may be drawn with a rule. The curves and the straight lines forming the design, must be drawn entirely free-hand.

CONTEMPORARY LITERATURE.

THE *Brooklyn Magazine* will shortly change its name to *The American Magazine.*

THE *Current* now appears in a more convenient form for reading and reference, 1 continues to maintain its good reputation.

THE *Caterer* is as good as ever, not only in its recipes, answers, advice and hints, but in its literary form. The housekeeper who has the *Caterer* needs no cookery book.

A NEW serial, by Leonard Kip, appears in the last *Overland.* A song, by Hilt Kane, "Life thou could'st have given to me, once, so much, so much!" is a pretty bit of verse.

THE *Atlantic* for January is a good number. Everybody should read "What Children Read," by Agnes Repplier, and "The King Who Went Out Governing," by Miss Vandegrift. They are too good to miss.

THE clever stories and instructive articles appearing in the January *Harper* give good promise for the new year. Mr. Warner's *Drawer*, Mr. Howells' *Study* and Mr. Curtis' *Easy Chair* are attractive and pleasant reading.

Dorcas has just completed its third volume. With its neat and tasteful appearance and its bright, useful articles, it must be a favourite among the ladies. "The Redemption of the Tin-Can," "Cosies," "Oriental Embroidery," such are the titles of three articles in a recent number.

St. Nicholas for January is like a second Christmas number. Margaret Vandegrift, Frank R. Stockton, Mrs. Burnett, Miss Baylor and many others, contribute to its pages. "A Visit to Eton" is one of the most readable articles, and like the others, it is well illustrated.

A GLANCE at the contents of *Science*, Vol. viii. reminds one of how much is going on in the world. "Bacilli and Butterflies," "Animals, Are They Happy?" "Honey and Ice-Cream," "Tin and Torpedo Boats," jostle each other in its pages—if you would know how scientifically the world wags—read *Science*.

THE *Educational Record* of the Province of Quebec is now under the editorship of Dr. Harper, the inspector of superior schools. Dr. Harper's high reputation and sound scholarship are well known, and our readers, to whom he is no stranger, will join with us in wishing success to the *Record* and the new editor.

THE December *English Illustrated Magazine* was one of the finest Christmas magazines issued this year, and merited all the praise bestowed upon it. The January number is fully up to the high average which this favourite magazine maintains. Among well-known writers represented may be mentioned the author of "John Halifax, Gentleman."

THE January *Century*, with the exception of one short communication, is wholly written by Americans, and the subjects treated, for the most part, are those of present interest to the American nation. Among the articles may be mentioned "Comets and Meteors," and "The Food Question." A large instalment of the "Life of Lincoln;" the opening chapters of Mr. Cable's new story and other fiction are also presented.

THE PEASANT AND THE PRINCE (Classics for Children). Ginn & Co., Boston.

A NEW GRADED METHOD IN ENGLISH GRAMMAR. By M. D. Mugan, St. Louis; Nixon-Jones Printing Co.

1. THE LEGEND OF HAMLET. By Geo. P. Hansen, Chicago: Chas. H. Kerr & Co. 25 cents.

2. THE SOCIAL STATUS OF EUROPEAN AND AMERICAN WOMEN. By Kate R. Martin and Ellen M. Henrotin. *Ibid.* 25 cents.

1. Selections with notes, vocabulary, etc., from Ovid. London: Rivingtons. 1*s.* 6*d.*

2. Cæsar. The Gallic War. Book VI. with notes, etc. *Ibid* 1*s.*

3. Molière's L'Avare. With notes. *Ibid.*

4. Schiller's Die Jungfrau von Orleans. With notes. *Ibid.*

5. German Declension. By Cormell. *Ibid.* 1*s.*

POEMS BY JOHN IMRIE, WITH AN INTRODUCTION BY G. MERCER ADAM. Toronto: Imrie & Graham.

PROCEEDINGS OF THE CONGRESS OF EDUCATORS AT THE NEW ORLEANS EXPOSITION. Washington: Government Printing Office.

THE BEGINNERS' BOOK IN FRENCH. Illustrated. By Sophie Doriot. pp. 304. 90 cents. Boston: Ginn & Co.

A good book—complete and well arranged. If any book will make French interesting to children, it is this one.

STANDARD SELECTIONS AND MEMORY GEMS. Chicago: The Interstate Publishing Co. 60 cents.

An attractive volume compiled by the Principal of Webster School, Cambridgeport, Mass. The mechanical execution is excellent, but one misses Shakespeare, Scott, Milton, and others, even though their places are filled by Webster, Read, and Halleck.

SCHOOLROOM GAMES AND EXERCISES. By Elizabeth Bainbridge. *Ibid.* 75 cents.

We predict success for this little book. Our friends, in country schools especially, will find it a valuable ally on occasional Friday afternoons.

NOTES ON THE HIGH SCHOOL READER. By R. Dawson, B.A., T.C.D., Head Master of Weston High School. pp. 124. 30 cents. Toronto: Rose Publishing Co.

The lessons prescribed for the third-class examination of 1887 are here annotated, biographical sketches of the authors and other information being also given. The timely appearance of this little book will be welcomed by many teachers.

AN ALGONQUIN MAIDEN. By G. Mercer Adam and A. Ethelwyn Wetherald. Toronto: Williamson & Co. Montreal: John Lovell & Sons.

We hope many of our readers have already seen "An Algonquin Maiden" for themselves. At all events, many will have seen reviews of it, more extended than our limited space allows us to present. It gives us pleasure to welcome another Canadian work by Mr. Adam, who has already done much, in a literary way, for Canada, and to express our hope that other works, yet more worthy of himself, may come from his pen in future years.

THE STORY OF THE SARACENS. By Arthur Gilman. New York and London: G. P. Putnam's Sons. pp. 493. $1.50.

The "Story of the Nations" is an interesting and important series, and he who has it in his library is well-furnished for historical study. From the dim times of the far past to the Fall of Bagdad, from the Queen of Sheba to Jengis Khan, there is here a fascinating narrative to read and much to learn from it.

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