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THE CANADA
EDUCATIONAL MONTHLY
AND SCHOOL MAGAZINE.

JULY-AUGUST. 1884.

THE PROVINCIAL UNIVERSITY.

BY THE HON. EDWARD BLAKE, M.A., Q.C., M.P., CHANCELLOR OF THE
UNIVERSITY.

LADIES AND GENTLEMEN:—

IT devolves upon me, according to custom, to say a few words with reference to the more immediate past, and also with reference to the prospects of this institution, and to give you in the first instance a few of the figures which indicate, so far as figures can indicate, our present condition. Several years ago the University made a great step in point of numbers. It was not to be expected that progress should continue at that rate, the most that all of us hoped was that we had made a new base, a new point from which to advance. There have been obvious causes which were, perhaps, somewhat calculated to diminish the numbers in the last year or two. In the first place a large migration has taken place to the North-West Territories of Canada; and in the second place we know that the necessities of the University and College have obliged us to increase the

fees within the last year or two, with a view of obtaining additional facilities for imparting learning; and this circumstance has been attended with a result which was not to be anticipated in this country. In imposing difficulties not immediately to be overcome on the part of those who are participating in the benefits of the institution, I think it well to observe that point, as it is a very grave indication of the danger of any further step in the direction of increasing those changes. Now the figures for the year 1882-83 are as follows:—Matri- culated in law 15, in medicine 17, in arts 177—a total of 209; and the graduates for that year in all branches were 91. Last year there were 8 gradu- ates in law, 24 in medicine, and 171 in arts, or 203 in all; and there were 78 graduates in all, 63 being in arts. I may add that the number of persons who have given notice for junior matriculation is 185, and these figures will probably be increased to 200 before the examination takes

*An address at Commencement, June 10th, 1884.

place. So that we have reason to suppose that the junior and senior matriculants will be at least equal in number to those we had in the previous year. The number of candidates examined for junior matriculation in the year just closed was 160; in the local examinations for women, 72; supplemental examinations in September, 72; arts examination. in May, 342; law examinations, 33; total, 736. Now, of the 315 persons who attend University College, the denominations are given as follows:—

Presbyterian, 146; Episcopal, 55; Methodist, 63; Baptist, 31; Roman, Catholic, 13; Society of Friends, 3; Congregational, 4. I may also give you some statistics as to the women under-graduates, and those of the standing of the fourth year number 5; of the third year 4; of the second year, 18; of the first year, 54—a total of 82. They have obtained in all, 307 honours, of which 159 are first class and 148 second-class, and they have won nine scholarships. With reference to the general standing of the University there are just two points to which I will draw your attention in the same line of information as that which I have been following. The number of degrees conferred since the founding of the University was 974, of which 14 were *ad eundem* and 860 have been students in University College, leaving 100 original degrees conferred upon non-attendants. These figures point eloquently to the very close practical relations existing between the teaching and degree-conferring body.

There is another statement which I wish to lay before you. We have, as is known, not merely an official relation, but a very close practical relation between this University and those institutions of high training which are known as Collegiate, Institutes and High Schools throughout the Province. Now of

the head-masters of these institutions there are 51 graduates of Toronto University out of a total of 94 who have graduated from Ontario institutions. Of the assistant masters, Toronto University sent out 73 out of a total of 98; and of 31 assistants who are under-graduates of Ontario institutions, 26 belong to Toronto University. From the figures presented we see that the share which the University is bearing in supplying the higher education of the Province is not merely a large, but an increasing one. It is quite obvious that none but the best results may be anticipated for the future of the institution, from the few figures I have given.

I rejoice to know that during last year, and the preceding years, greater degree of activity has been shown by those in various relations to the University and its concerns. Convocation has been more active. The body of its under-graduates and graduates has also been more active, and generally speaking I think it may be said that a new era, almost, has opened before us—that the *esprit de corps*, the warm feeling for the institution to which they owe so much has been, I will not say kindled, but kindled into a more fervent flame than used to illuminate, and we may hope from them also the best results. There has been during the last year a considerable amount of discussion with reference to this institution, and with your permission I wish to refer to a few of the facts which have sometimes, I think, been a little overlooked in this discussion, on the part of those who have taken part in it—I will not say in hostility, but in modified opposition to the views which we cultivate. It is never to be forgotten that with reference to the officers of this institution—whether they be the professors, the Council of University College,

the Senate of the University, or the convocation of the graduates that we are, in all the positions which we take, the creatures of the public will, established by the statutes of the land, and that we are carrying out to the best of our ability the duties which have been assigned to us under the laws of the land. Many years ago the endowment, by virtue of which this institution lives, was created; but it was created not for the benefit of all, but for the benefit of the adherents of one particular denomination. At a subsequent period a considerable portion of it was withdrawn for an institution of great consequence indeed, but not of the character of a university. Against the application of that endowment to the purposes and objects of a single church there arose naturally and properly a struggle, and ultimately the constitution of this institution was modelled on a large and comprehensive basis. I have always regretted that the Church to whose special use the endowment was at first applied did not accept the situation and avail itself of its denomination funds and energies to create a great theological college in close connection with the State University, and help on that which had become the settled policy of the country, and which I believe would have been by its assistance rendered beneficial to the State at large, and to the particular denomination to which I refer. But after all it was not very unnatural that those who obtained this endowment should be very much disappointed when it was thus set off. It was only the other day that we learned that the peculiar ideas, which I thought had vanished, still hold, for no less a person than the Archbishop of Canterbury has declared that an act of confiscation and spoliation was committed when the endowment was diverted from the improper purposes to which it was at first applied, to the

only proper purpose, a purpose available for the general good of all, whatever the creed or denomination. Owing to this and other circumstances there were for many years those who were dissatisfied with the new constitution of the University. It had been devoted to the purposes of one denomination—it became applicable to the purposes of all, and there were those who insisted that this was a bad thing too; who insisted that it ought to be divided, ought to be made applicable to the various denominations. An organized effort, which sometimes threatened serious consequences, was made to subvert the remodelled constitution. But this University has survived those efforts, and survives them still. It has grown in spite of all that opposition, and it will grow still. It is strong in spite of all that opposition, and it will, I believe, become stronger still. The University, as such, has never had any hostility towards any other educational institution. Its officers desire to live on the most friendly relations with all such institutions. We feel that it is our duty to forward the interests, to advance the claims of this State institution, of which we are the guardians, and of that duty there is no part which obliges us to assume hostility to others. But it is necessary, after all has been said, that a few words should be spoken from this platform upon a great question which I supposed was settled finally many years ago. I need not say to you that I do not speak to you to-day as explaining the views of the Senate of the University of Toronto. I speak to you as official heads of other universities in the Old Land are permitted to speak on their annual celebrations—on my individual responsibility, and expressing my own sentiments. Nor do I intend to enter into any argument or reason upon points which

are sometimes disputed. I intend to recall to your recollection admitted facts. For many years before Confederation the question of State aid to denominational institutions agitated the minds of the people of the old Province of Canada. It was familiar to us at that day. Arguments *pro* and *con* were advanced, and it was pretty plain to those who looked at the material for forming a judgment as to the popular sentiment, that the sentiment of the people of Ontario was hostile to that system. Confederation came and gave us freedom for local affairs, including the great question of education. All the people of Ontario had settled down to the view that the voluntary system should be carried out in our institutions to the fullest extent, and the proof of that end is obvious. Up to that time seven colleges in the Province were receiving public grants:—

Regiopolis, Kingston.....	\$3,000
Queen's, Kingston.....	5,000
Bytown, Ottawa.....	1,400
St. Michael's, Toronto.....	2,000
Trinity, Toronto.....	4,000
Victoria, Cobourg.....	5,000
L'Assomption, Sandwich....	1,000

In the very first session of the Legislature of Ontario, the Government of Sandfield Macdonald proposed that these grants should be discontinued, that they should be paid for eighteen months, for convenience sake, and thereafter discontinued on the ground of their inexpediency, and a law was proposed which declared that it should not be lawful after that time. That law was assented to by the whole Legislature. There was no division of parties upon it. I do not mean to say there was not a man in Parliament who did not sympathize with that law. But the public sentiment was overwhelmingly in favour of it. An attempt was made to get up an agitation against this policy. The

subject was discussed during the recess, and we went back to Parliament knowing that the subject would be brought up again; and in December, 1868, it was proposed

"That in the opinion of this House it is necessary and expedient in the interests of collegiate education that some comprehensive scheme be devised and adopted for giving effect to the objects, and for extending the operation of the Act, 16 Vic. cap. 89, for the establishment of a Provincial University, and the affiliation of colleges to be supported in connection therewith.

To this resolution the following amendment was moved:—

"While this house recognizes the importance of educational interests it is still of the opinion, as expressed by the Act of last session, that no college or institution under the control of any religious denomination should receive aid from the public treasury."

Now, some who approved of the principles of the amendment, yet wished to recognize the desirability of some improvement in our existing provisions for superior education, and particularly did they wish to recognize the expediency of providing for a uniform, elevated standard of education through the medium of the Provincial University. I had the honour of moving in that direction, but I felt that there were great difficulties in the way that could not be overcome without the cordial assent of existing institutions whose chartered rights no one proposed to interfere with, in the slightest degree: that this action must be purely voluntary or nothing could be done. I felt also that it was not for those who stood in the relation in which they still stand to our educational system to devise a plan which they had not power to carry out, because, as I have stated, no plan could be carried out

except it should receive the cordial assent and co-operation of these other institutions. I did not agree with their view that we should devise the plan, but I did agree with the view that we should express our willingness to consider fairly and cordially any plan that might be devised by those who complained of the existing state of things. I moved the following amendment:—"That this House, while firmly adhering to the view that denominational colleges should not be supported by State aid is prepared to give its best consideration to any scheme which may be laid before it for the improvement of superior education and for the establishment and maintenance, through the Provincial University, of a uniform and elevated standard of graduation." Now, that amendment was carried by a vote of sixty-six to four, and the four who voted against it did so because they thought it was not unfavourable enough to the denominational colleges, so that there was practical unanimity, in the mind of the Legislature, in the re-assertion of the view that the public interests required the adoption, to the full, of the existing system, that there was to be no attempt to resume a system of public aid to denominational colleges, and that it was important to make arrangements for the establishment of a uniform and elevated standard of graduation through the medium of this, the Provincial University. Now, since that time there have been in the Province four general elections, and I am not aware that any party or individual has at any time raised the question whether the decision which was then reached by the Legislature was a sound decision. It has seemed to be universally assented to. The offer was made at that day to consider any plan consistent with the fundamental principles which are embodied in the

resolution that might be brought forward by those who asserted that there was a better mode of dealing with this subject; that offer has remained open ever since, but it has never been accepted. Why not? I leave that question to be answered by those to whom the offer was made. I have only to say for myself—and I think I speak for others who are deeply interested in the question of higher education—that we are as anxious to-day as we were at that time to consider calmly and fairly, and if possible come to a favourable conclusion upon, any plan which shall not involve the sacrifice of fundamental principles, and which shall not involve the impairment or destruction of this crowning edifice of our Provincial educational system.

Now, much has been said on the subject of union, and I am sure we shall all be delighted if a plan should be brought forward which is adapted to all the necessities of the situation, which is not inconsistent with the fundamental principles which each holds, and which should promote a real and cordial union of sentiment and interests in the establishment and perfecting of the new system proposed. I say so for myself; I have always felt it. I have not seen my way to reconcile the positions which are taken by those who occupy places opposed to myself on this subject, and therefore I have not been able to propose a plan; but if a plan can be proposed, I am sure it will be considered with the desire to find that it shall be successful. But I say this, that it would be infinitely better for all the institutions that the present condition of things should continue than that a union should be consummated which would be but a hollow union, which would not be a real cordial union, which would not be a union in which each felt that the best had been done that was possible for each and that

there was common work to be done by all in carrying out the new plan. Now, in the sixteen years which have passed since the time of which I spoke, the constitution has been further liberalized. The graduates elect a large part of the Senate; Convocation has been endowed with advisory powers, but the decision in all matters rests, as it rested formerly, with the responsible representatives of the Province. The Government appoints a large part of the Senate; the Government exercises its judgment as to whether the statutes of the Senate are good or not, and without the assent of the Executive Council they are inoperative. The Government appoints the professors and controls and decides on the wisdom of the financial schemes with reference to the endowment which may be proposed from time to time. It is a public institution maintained out of public funds for public purposes, and the condition alone upon which it can continue is that it is under the control of the responsible Government of the day through the media to which I have referred. Now it was the duty of those entrusted with the management of the institution loyally to carry out the public policy, loyally to endeavour to give effect to the national will, and that has been their effort. From time to time various provisions have been made by which several institutions in arts and medicine have been formally affiliated, and others have been placed not in such a formal relation, but still in close and effective relationship with this institution. The hopes of the Legislature, dependent as these were on the assent of other colleges, have not been fully met. They have to some extent been disappointed, but still the objects it had in view have been largely met. In carrying out the policy to which I have referred no crusade has been made by this institution against any other. Far

from it. We have only laboured to advance the State institution, and with that view what has been done? At an early period these buildings, the chief ornament of this city and Province, were erected. Even at this time we sometimes hear murmurs as to the wisdom of their erection; but those who know, as I do—though I was but a young man at the time—all the circumstances of the University when that policy was adopted, know that these buildings were in a marked sense the sheet anchor of the institution in the storms which at one time threatened to subvert it. Now for a long time the realization of the ideal university was very imperfect. The hope was to make this a central and focal point in which the youth of the land, of whatever creed, or from whatever part, who were capable of deep study, and whose breasts were lit with the sacred spark of learning, might meet together and obtain a first-class university education—all the better for the multitude of those who should come together in competition—all the better for the circumstances that the multitude was to be drawn from all classes, creeds, conditions and localities in the Province of Ontario. The hope was that the various denominations, establishing their theological Colleges close to the University, might avail themselves of the arts course in our institution, and thus not merely help forward the better culture and training of those whom they intended to supply their pulpits and instruct their people, but also help forward by active supervision, by the association with those of them who were most religiously inclined, the students in arts of their own denomination. For many years only one denomination took advantage of this vast benefit which was held out by the State to all. Our old and firm friends of Knox College—to whom this College and University owe so much,

and who owe not a little to this College and University also—did early take advantage of our plan to a very full extent; and partly perhaps it is due to that cause and partly also to the well settled and hereditary love of deep learning and higher education, which forms one of the most honourable attributes of the Scottish nation, that a very large proportion of our undergraduates of old days belong to the denomination with which that college is connected.

And latterly, as I have had occasion to congratulate you from this platform, the sound principle has spread. We find to the north of us McMaster Hall, a magnificent theological institution, well-built, admirably manned, and equipped and supplied with all the educational appliances required for its particular purpose, in close relation with the University. Amongst the provisions which are made by its authorities is one to the effect that students of the Baptist denomination who are attending the Arts course of University College shall be permitted to reside in McMaster Hall, so that they recognize the expediency of carrying out that plan, and giving the most absolute safeguards that can be exacted by parents and all those interested in the religious training of the young that they shall be well looked after, both by the circumstance that they are under the same roof with the instructors of the theological students, and by the circumstance that they are intimately associated as fellow-residents with those of their own denomination who are about to be called to minister in their pulpits. Well, besides this, a new relationship has been created between the University and the denominations. One of the oldest of the Arts colleges, which had been in receipt of one of the grants to which I referred, became formally affiliated to this University—St.

Michael's College—one of whose students was a successful candidate for high honours, and has just received a gold medal from this platform; that institution is now formally affiliated. These facts show the adaptability and expansive character of our system. You find an informal but close relation with theological colleges like McMaster Hall and Knox College, and you find an affiliation with an Arts college like St. Michael's. You find the possibility of such further training as they choose to impart being imparted by the College staff, while the students attend our lectures and receive the benefit of the information imparted, the standing obtained, and the competition and association with the large body of the undergraduates of University College. Then Wycliffe College has been established in relations somewhat similar to those of Knox College, for the purposes of the Church of England, and maintains the closest and most friendly intercourse with this University, and it is enlarging its borders and accommodations for the express purpose of giving the students at the University, although not going into the ministry, an opportunity of residence in the college of their Church, and association with the professors and students of the theological faculty.

Well, this is a vast number of all denominations—considering the total population of the Province, and the number we expect to undergo the sacrifices so often necessary to attain a university education—attending our lectures, and I have shown by statistics, I think, that the institution is in the fullest and broadest sense a National and Provincial institution.

It was but the other day that we welcomed an event which has lately resounded through the religious world—the final consummation of the union of the various branches of the Methodist Church, and we know that their

arrangements for higher education are still unsettled. I took the opportunity a while ago at a banquet in connection with this University of expressing my humble hope and wish in connection with those arrangements. We who believe this is the best system are deeply interested in those arrangements. We who have at this moment some 63 Methodist undergraduates in this institution, are deeply interested in any plan which that body may adopt with reference to university or higher education, and I do hope that before finally deciding they will dispassionately review the whole situation, and consider what the advantages are which the State plan now offers. As I said on the occasion to which I referred, if we could see that great denomination—great in number, great in energy, great in the union which marks its deliberations, great in the union which marks the result of action on these deliberations—if we could see them bend those energies undividedly to the establishment of a great theological college close to this university, we should see a theological college of such dimensions and so equipped as we do not possess in connection with any of the denominations of the Christian religion; and if the whole energies of that denomination were concentrated on a college of that kind; if for the purposes of their church, they were to use their funds, their resources, their energies, and avail themselves of the State institution for those things which the State can do and is offering to do, and is doing in arts training and secular education, I ask them, I ask you, I ask all, is it not certain that greater results could be accomplished for them and for all than could be possible by any other plan that could be suggested? As I have said, one type is not the only type. You have the case of a theological

college (St. Michael's). There is much to be said in favour of arrangements whereby in the affiliated colleges tutors may be used and assistance rendered to those residing in those colleges who meet in the common training school. But what I should like to see in the interests of this Province, and what I believe would be in the interests of that denomination, would be that this occasion should be taken advantage of, that that great body should come heartily into line with our system; and as we now possess a large proportion of those who undertake a university course from that body, we should find them all within our walls.

Now we are not a rich people. We require, in order to have a great university, a great expense—You cannot have it without. You require two things; you require a large expense for equipment and for staff, and you require a large number of students in order to make a great university. You must have the men and the means to teach, and you must have the multitudes assembled together to learn. It is in the great competition, in the great multitudes assembled together, in the number of active intellects meeting together in friendly, liberal, and cordial competition in the race for distinction, that you get one of the most important elements of a university. It is not to be said that the denominations which join, lose. On the contrary they gain, because they will have an influence in the conduct of the concerns of this institution. They gradually become our graduates. They elect along with ours a large proportion of the Senate. They support the institution, they mould its policy, and it is not absorption, but conjunction, which would produce increased strength.

We were sometimes called in the old days—and to-day there is

a faint revival of that cry a godless college, and I see we are under the ban of the Archbishop of Canterbury in this as in some other particulars. It is not necessary on this occasion and before this audience to repel that charge by argument. It is the less necessary because within the last few months we have had ample vindication and exposition of that subject from eminent men; from the President of University College, Dr. Wilson; from Principal Sheraton and from Dr. Caven by speech and writing. I do repel it however. I repel it as not merely unfounded but—I will not say intentionally, but yet, insulting. We who are undergraduates and graduates of this institution belong as I have shown you by figures, to various denominations; we are true to our various denominations; we are doing our duty by them. We are not a sect of secularists as is almost implied by this charge, but we are a Christian people belonging to the various denominations into which the Christian Church is divided in this country, believing this is the best practical plan of carrying out the great object of higher education in which we are concerned. And those who so talk should remember that by going in cordially with that plan they destroy the faintest pretence—if such there be—for the truth of the charge, because the more the Churches and themselves of the State plan the more intimately they associate themselves with it, the more they bind themselves up with it, the more they mould the character of this institution, and give, as they alone could give, a rightful place to religion by those proper methods which it is for them, and not for the State, in a day of separate and divided creeds to apply.

Now, if I may be permitted to say a word on another subject it is this: I feel that there has been an attempt in that same speech to which I have

twice referred, by the Archbishop of Canterbury, to intermingle the questions of the common school education and the university education, and we had an account as inaccurate as it was possible for an account to be of the position of that question so far as it was in controversy. I want to make one practical proposal with reference to religion in schools, and I maintain if this proposal is not acceptable to the denominations it is to be regretted, and it proves in the plainest way the impossibility of such a system on any other basis. I see no reason why the heads of the various denominations of this country, Protestant and Catholic, should not unite in a selection of passages of Sacred Writ without note or comment, which it should be the duty of the masters to set for the scholars to learn and to repeat daily in the public schools of the land. I think it perfectly possible in the present more happy sentiment which prevails among those of different religious creeds for such a combination to be made by them. The State cannot make it; it cannot attempt it; and if those who call for religion in the public schools will meet together and will agree that certain passages may be learned and repeated without note or comment, without exposition or explanation by the master—leaving that to the pastor or parent at home or in church—then that can be done which would be of very great consequence. It is of the last consequence, not merely that the Bible should be read, but that while the memory is young, fresh, and retentive its words should be stored in the mind, which will then retain the impression. If that can be done, much will be done; if that cannot be done by common consent of the denominations I ask you what can be done?

[After referring to the necessary

expansion of university teaching in recent times, owing to the wonderful advances made in science and other departments of study, and pointing out that this meant great expense and fewer good universities, the Chancellor proceeded]:—Some say that a university is a luxury for the rich. I deny it. I say that it is a necessity for the poor. The rich man can provide an education for his son if you destroy this institution to-morrow. It is the poor men, the men of narrow circumstances, whom you are really helping forward in the struggle to advance his children, when you maintain a great university, with tuition as nearly as possible free, and doors open to all, no matter of what creed or how scanty their purse. I know that great sacrifices are incurred even in our day by those who send their sons to this institution. I know that great labours are endured by young men who, have perhaps taken prominent places in their class lists, or who win prizes or medals, and who help to maintain themselves by work while they are engaging in their studies here. Even this institution cannot be used by those of narrow means without those sacrifices, and it must not be forgotten that much has been done—though much remains to be done—for the masses of the people in the maintenance of such an institution as this. This is a country in which any man may hope that his son may rise to the highest place; and who doubts that a liberal education is one of the easiest and most effective channels by which that place can be reached? This is a country of popular government, and popular government is a difficult science. It requires learning; it requires training. Our friend, the President, alluded to a chair of political science which we should all like to see established. I say it is a shame that we have not such a chair. Our constitution, the constitution of

other countries like ours, the laws which regulate the growth and progress, the rise and fall of free institutions, the general principles of justice and jurisprudence—not the technicalities and subtleties of the law which incrust and overshadow these principles—these general principles, which every educated citizen should be familiar with and every legislator should know—the principles of political economy, the general principles of history, so far as they affect the growth and life of the State. Are not they the A B C, the very alphabet of the statesman's career? And yet our provision for that science is to-day of the most perfunctory character. But while I speak thus, yet this institution does to some extent supply that want—a want which it is essential to the good government of the country should be supplied. If you take this as a poor man's question, I say that the poor man is infinitely more interested in good government than is the rich man. The rich man can bear a bad government, but with the poor man the margin between what is tolerable and what is not is so narrow that a good government or a bad may make all the difference. A few years ago the Senate decided after two years' consideration that the changed circumstances as to members as to the domain of knowledge, apart from the considerations to which I have alluded, rendered the funds inadequate, and they represented that fact to the Government. They did their duty. They were responsible for the efficient management of the institution, and they would be doing less than their duty if they did not point out to the authorities the requisites for its efficient management. No particular notice of that application was taken by anybody. A year ago the Vice-Chancellor from this place reiterated the demand, and then arose the storm. It was said this would never do. We were told that all the

old questions were to be brought up again, and that we were to be subjected to criticisms and animadversions, not merely with reference to the funds of the institution, but with reference to the settled principles of this and similar institutions. Now time passes, and I wish simply to say that I was glad the discussion took place, for I believe the result of it has been to explain and make clear to many people what might have been obscure to some—what the position and the strength of this institution are.

We do not object to criticism. We do not profess that no mistakes have been made at the beginning and perhaps in later days; but I say there has been no effective attack on the conduct of this institution or upon its success as judged by its fruits.

And while we are prepared to vindicate our general course; while we are prepared to justify our demand for more funds on the proposition on which alone it can be justified, namely, that the public good demanded it, we shall always be found ready, should an attempt be made to subvert the principles supposed to be settled, to vindicate the honour, the reputation, and the utility of the institution. We have no desire to live except on the condition of proved continued utility. There are many points in the agitation

I should like to say something about—the higher education of women, the question of Upper Canada College, and various points attempted to be made against that institution, but for none of these does time serve. I would only say this, that going on as we have been with the earnest desire to improve by all criticism, friendly and kind and candid, or unfair and uncandid, going on as well as we may towards that measure of perfection to which human things can go, we ask from the people of the Province no more than this: that if they adhere to the theory of a great State institution for university education; if they believe that that which they established was well and wisely established, they will persevere in their policy. And if the circumstances of the case demand further funds in order to the continued efficiency of the institution, under the changed conditions, they will not allow this institution to pass into the shade for want of those funds. Whatever the result may be, the duty of those charged with the affairs of this institution is clear. It is to administer its resources to the best advantage, to apply all the most modern and approved methods, and to vindicate its existence in the future as they believe they have done in the past.—*Globe Report.*

"THE POPULARIZATION OF SCIENCE is now a leading theme of scientific men," says Mr. Lester F. Ward, of Washington, D. C. "To accomplish this certain branches of science must first become a part of liberal culture. The pursuit of fashion, which is usually regarded as a production solely of evil, may be made an agency of good. If it could become as much of a disgrace to be found ignorant of the flora or fauna of one's native place as it is now to be found

ignorant of the rules of etiquette or the contents of the latest new novel, devotees of botany and other branches of natural history would instantly become legion, and the woods and fields would be incessantly scoured for specimens and objects of scientific interest. It should be the acknowledged work of educators to make science fashionable and call to their aid these powerful social sentiments in demanding the recognition of its legitimate claims."

"A WITHERED ASTER."

BY D. F. H. WILKINS, B.A., BAC APP. SCI., MOUNT FOREST HIGH SCHOOL.

A FADED flower, one of last autumn's latest, telling of that sweet, calm beauty which is the herald of decay; telling of gorgeously vested trees, of ripened harvests and of gathered crops, of dropping nuts and of withered leaves, of

"Wailing winds and naked woods,
And meadows brown and sere."

A pressed, dried Aster (*A. cordifolius* *Lin.*), found flowering not many months ago in a picturesque glen, maple-and elm-crowned on one, and pine-clad on the other—the southern side; flowering in soft, springy ground, flowering hard by a forest streamlet, flowering on a calm, cloudy, yet clear day of last October. And even this faded flower will interest all, will, for it can, present many features worthy of every one's admiration.

Look, therefore, at its smooth stem, its leaves, below heart-shaped and large, with winged leaf-stalks, pining away to mere little bracts above. Note its branched stem of blue flowers with yellow, purple-changing hearts. Select one of these so-called flowers, and, after slicing it through, discover that the so-called "flower" is really a head of many flowers, those of the "heart" or "disk" differing from those of the rays. Examine carefully a disk-flower, after detaching it from its friends, and note:

1. That while the calyx, or outer floral envelope, is apparently wanting, it is in reality present, its united leaves or "sepals" being so consolidated with the carpels as to be undistinguishable therefrom; and that its "limb," owing to the crowding of the florets into a "head" has become a

mere circle of down or "pappus."

2. That the corolla, or inner floral circle, is composed of five yellow "petals," consolidated at their base with the "carpels," *i.e.*, growing from them, and united so as to form a tube-shaped or "tubular" organ.

3. That the first reproductive circle is composed of five "stamens" growing out of the corolla, and having their "anthers" or upper parts united so as to form a sheath around the "style."

4. That the second reproductive circle or "pistil," has two united and consolidated carpels, a central pillar or "style," and two feathery "stigmas" or sensitive surfaces at its summit.

Taking for contrast a ray-flower, let us note:

1. The corolla, composed of five light-blue, not yellow, petals, not tube-shaped, but strap-shaped, as if the finished tube had been slit down and pressed into a four-veined leaf.

2. The absence of the stamens, as if a large part of the plant energy had been devoted to development of the blue, strap-shaped corolla.

Consider now the exquisite adaptation of each peculiarity of our species to its home. The smooth stem, the large, thin leaves, are specially fitted for the cool, dark shade of the edge of the streamlet. The flowers, crowded into a head by the suppression of their main stem and pedicels, are by this means adapted alike to the heat of early September and to the frosts of late September and of October, a protection further ensured by the row or rows of scales or bracts surrounding the head. The coherent, superior

calyx with its limb modified into down serving to carry the ripened fruit far away from its quondam home; the tubular, superior corolla of the disk, the stamens enclosing the style and united by their anthers—all these features aid in protecting the ripening fruit of the two-carpelled "inferior" pistils—inferior, because consolidated with calyx and corolla into one mass. The strap-shaped corolla is not in vain, nor is its colour blue, or in some species lilac, white, deep purple, or even pink, merely to please the human eye; in other words, the yellow disk and the blue, purple, pink, lilac or white rays, tube-shaped and strap-shaped, have their purpose, their use. This is to attract the eyes of insects, which, in their apparently aimless search for honey, dive down deeply into the tubular corolla, and in so doing, unwittingly attach some of the precious pollen of the anthers to parts of their bodies. Visiting the next flower, or the next head of the Asters and their friends, the feathery stigmas at the top of the style detach the pollen before the insect can explore the depths of the corolla—each little feather fulfilling the purpose of appropriating its own share. Are not indeed the feathery stigmas protruded above the other organs or "exserted" for this very purpose? Here, too, one will note how the ray-flowers are compensated for the want of stamens. Owing to their differing in colour from the disk, owing to the greater length of their corollas, owing to their situation, fringing, coasting so to speak, the edges of the disk, the chances for their fertilization are greatly in their favour.

Only of late years has it been shown that to insects and to the wind are due the healthy life resulting from "cross-fertilization." Only of late years has been shown the intimate connection between the brilliant colours and the sweet odours of the

flowers on one hand, and the senses of bees, butterflies, moths, etc., etc., on the other. Only of late years has it been shown that to secure "cross-fertilization," the plant-energy of the wind-swept flowers is expended, not in the production of brilliant corollas, where they would be useless, and indeed rapidly destroyed, but in the production of super-abundant masses of pollen. Yet these are facts, marvellous facts which stare us in the face. And the question is, shall we interpret them as links in a chain, as elements of a scheme, divinely planned and worked out; or shall we ascribe them to a mere gratuitously conjectural, entirely hypothetical and undemonstrated desire on the part of the plants for improvement and progress? to a blind, yet intelligent forethought on the part of unconscious vegetable structures? Of this more anon. Given, however, a short, intense summer, a long autumn, plants to be perpetuated, developed and improved, and nectar-loving insects—and our Aster is adapted to these conditions, just as reason would require.

But our plant has more, much more to tell us. It is a member of a large genus, some of which, notably the red-stalked Aster (*A. puniceus* *Linnaeus*), brave the cold climate of the far north, while others love the sunny south. Even here in Ontario, one species (*A. Novae Angliae*, *L.*) prefers the rich soil and the warm climate of the north shore of Lake Erie; and when found farther north, as it is abundantly near Toronto and Hamilton, as well as east of Toronto, it invariably chooses low situations. A handsome, well-marked species with intensely yellow disks, rich dark-purple to pink (!) rays, heads in crowded bunches or "fastigate corymbs," leaves eared and almost clasping the hairy, clammy stem, a species rarely attaining with us a greater height above the sea-level than four hundred feet.

But even this is not all. A noble family of over a thousand genera, a well-marked "Natural Order," the "*Compositæ*," is the one of which our Aster is a good representative. An order possessing in all its genera the "headed" flowers, the adherent, united calyx, the superior corolla, the anther-united stamens, the two-cleft style. An order with four well-marked sub-orders, namely :—

1. With all corollas tubular, as the thistle, the burdock, the tansy.

2. With the disk-corollas tubular, the ray-corollas strap-shaped, as the aster, the daisy, the golden-rod, the sunflower.

3. With all corollas strap-shaped, as the chicory and the dandelion.

4. With all corollas two-lipped.

These peculiarities fit the order for world-wide distribution; the first and the fourth sub-orders, the latter in particular, for the inter-tropical regions, the second and the third for northern climes. And it comes to pass that the wind-swept summits of the White and of the Adirondack Mountains, the gloomy Laurentian coast of Labrador, the far-stretching prairies of the west and north-west, the sunny clime of the Pacific slope, the fastnesses of the "Rockies," lonely Newfoundland, tilled Prince Edward, sea-girt Nova Scotia, wooded New Brunswick, picturesque Quebec, agricultural Ontario; the Eastern, the Middle, the Southern, the Western States; sub-tropical and tropical Mexico and Central America; the Llanos, the Sylvas and the Pampas of the Southern Continent; "the happy homes of England;" the orange and vine-growing shores of the Mediterranean, level Holland, rocky Switzerland, bleak Lapland, the fjords of Norway, the Tundras of Siberia, the glowing, fervid India, sunny "Cathay," the Southern Cape, solitary Saint Helena—all these and many other places offer them a home. The city with its roar, its

glare and its glitter, the quiet country village, the lonely hillside, the rank, steaming swamp, the meadow, the forest, and that pretty walk "down by the river side"—all furnish their quota of representatives. From the lofty tree to the diminutive, weak-stemmed herb one gathers individuals of this noble family.

Secondly. Such varied geographic distribution combined with such a persistent uniformity of structure, deviating in minor points from a well-marked Ordinal type, leads us to expect a *persistency in time*. A highly respectable, eminently conservative family are these composites, neither too high nor too low in the vegetable world, retaining their persistency in all regions of the earth, and why not also through a long period of its history? Why may not the order date back to the Carboniferous, or even to the Devonian age? Persistent animal types, such as the Lingula and the Nautilus have maintained such an unaltered generic structure since the Cambrian Age, that the veriest tyro may at once determine the fossil from the living species of either. Just as of old the little Lingula, neither too high nor too low a Brachiopod, goes on secreting bone-earth and not limestone from the sea. Just as of old, the Nautilus, a high Cephalopod, annually increases its shell by a new chamber, and neither advances nor retrogrades; while the more highly-developed Orthoceratites of the Palæozoic and the Ammonites of the Mesozoic time have perished ages ago. Just as of old, among plants, world-wide ferns, horsetails, and club-mosses, flowerless plants it is true, yet the highest in their series, grow and die. Is it then too great a speculation, is it merely a conjecture that in some coaly bed of the Carboniferous Age, or mayhap earlier, the ancestral Composite may be discovered? If one may entertain this view, is he not

justified in endeavouring to reconstruct the plant in question? If, too, there can be pointed out a Composite possessing the character which reason would infer to be those of the founder of the family, is it wholly absurd to suppose that in this genus we have the unaltered descendant of the archetypal Composite, unaltered except, perhaps, in height and in bulk? Remembering the climate of the Devonian, "Gaspé sandstone" period or the Coniferous, and the Middle Carboniferous—one damp, warm and foggy over large areas—giving an impetus to all kinds of leaf-growth; bearing in mind that although there were hills wooded to their summits, and most likely high, wooded plains, there were also immense marsh-stretches. Keeping these before us, one would expect to find, after wading through a dense swamp, dense with ferns, horsetails, or, perchance, a reed-like, perchance a tall, stout, tree-like plant, bearing circles of linear leaves at intervals around the stem. It must here be remembered that all the early plants bore their leaves in circles or whorls. One would expect to find at the summit of the stem, so as to catch all the possible sunlight of the day, a solitary, dark-purple head of many flowers. Solitary, for the plant-energy of the warm, damp period would be given to leaf rather than to flower-growth; dark-purple to attract the orthopterous insects of that day. One would expect to find each flower, five-stamened, united around the two carpelled pistil as at present; without this circle, five barren filaments or "staminodia," which, in the hot, steaming atmosphere, would quickly develop into five petals, soon to be united into a tubular corolla.

Now, singular to say, a plant possessing all these characters, grows today in ponds and marshes along the Atlantic seaboard of the United States,

more abundant toward the south, and reaching its northern limit in the State of New Jersey. This plant, a true tubular Composite, has a smooth stem of two feet or more in height; linear and bristle-formed leaves, whorled, about four to five inches in length; one to three heads of dark-purple flowers, erect and terminal *i.e.*, at the summit of the stem. May not this plant, the *sclerolepis verticillata* of Cassini, the *sparganophorus verticillatus* of Michaux, be a near relative to, if not the unchanged linear descendant of the first Composite? This granted, it is easy to see how, step by step, the whorled leaves would be changed to opposite or alternate, and now the life-force thus saved would be employed, first, in developing larger though fewer leaves; secondly, in increasing the number of heads of flowers. Still later on would occur the division of an extensive order into four sub-orders, to the second of which, as has been stated, our Aster belongs. And who shall limit the Aster to a later period than the Miocene Cenozoic? Extending today from the Arctic circle to Florida and to Mexico, and from ocean to ocean, why may not its progenitor be looked for in the Miocene of Greenland, or in the Eocene of our own North-West?

And now our Aster has told us something regarding its history. It is true that much is omitted, much left unsaid, still enough to awaken curiosity, to stimulate research. One point remains for discussion. Are its structural peculiarities, are its analogies and homologies the outcome of a Divine plan, or are they due to a certain instinctive, unknown, yet known, blind, yet intelligent, intuitive yet superinduced forethought on the part of the plant itself? Which is the wrong conclusion, which the preposterously ludicrous alternative? Is it more ridiculous to suppose that a

Personal God could and can adapt each item of His plans, "secret to us," to the past, the present and the future order of nature, than to suppose with an eminent biologist of the present day, that plants have endowed themselves with an almost superhuman intelligence? Not to be misunderstood, his unaltered statements are given at length:—"The more the flowers of the original lily family succeeded in attracting the eyes of their winged guests. . . ." "By devoting one row of stamens to the function of alluring fertilizing flies they have secured the benefit of cross-fertilization, and so have got the better of all their less developed competitors." "The amaryllids and their more advanced descendants have not had time to adapt themselves. . . ." "These water-weeds have acquired the habit of trusting for fertilization to the wind, which carries the pollen of one blossom to the sensitive surface of another, perhaps at less trouble and expense to the parent-plant than would be necessary for the allurement of bees or flies by all the bribes of brilliant petals and honeyed secretions. . . ." "To effect this object their stamens hang out pensile to the breeze. . . ." "The amaryllids . . . have not yet had leisure to gain quite so firm a footing in the world. . . ." "The existing rushes are all plain little lilies with dry, brownish flowers, specially adapted to wind fertilization alone. . . ." "The wood-rushes may thus be regarded as some of the earliest plants among the great trinary class to adapt these tactics of storing gluten, starch and other food-stuffs along with the embryo, which have given the cereals their acknowledged superiority as producers of human food." Is it more absurd to suppose, that admitting evolution to be a fact and not a hypothesis or perhaps a theory, that a Divine Being cannot alter the relations of plants and cannot change

their variability or invariability, than to humanize plants so that they can comprehend not merely their present but their future? Which is the more anthropomorphic, which the more sophistic, the more like a certain dogma of a certain sect of Grecian philosophers by no means the first, by no means the best—"Man is the measure of all things?" Is it more silly to believe and to teach that each fossil, whether vegetable or animal, each rock or stone, every living being, the history, the philosophy and the mythology of every nation, point forward wittingly or unwittingly towards "Cross-crowned Calvary," than to endow "by a strong effort of scientific imagination," inorganic matter with "the promise and potency of life?" So far as a short article can go let a summary of the evidence on both sides be stated; or rather let the evidence be placed side by side. And thus we find:—

1. A number of "found links," with the presumption that more may be found.

2. Varieties, indubitably made by human effort, differing more widely from one another than certain well-marked species.

3. An ingeniously woven web of mere unproved assertion made to do duty for hard science. If any one doubts this, let him read the works of Darwin, or of Hæckel, of Huxley, or if time do not so allow, the short, yet fascinating essays of Mr. Grant Allen in "Flowers and their Pedigrees," "Robin Clout's Calendar," "Colours of Flowers," and other works of a similar character.

1. A yet larger number of "missing links," with the certainty that many cannot be found.

2. The absolute invariability of species so far as our experience has yet gone.

3. Indubitable instances of Design, Plan, and even Miracle, many in number, far more reasonably referable to a Divine Personality than to a blind, unintelligent, unknown, somewhat of something—the said Plan not excluding "Evolution by the Word of His Power," as an efficient cause production of new species, whether by "Natural Selection," by "slight variations in the ovum," by "Parthenogenesis," by "a force which is a mode of the unknowable," or by any other, or by all these methods, while including here and there, the direct creation of species "out of the dust of the ground."

Let the reader carefully weigh even this imperfect summary, and then let him see whether the words of a veteran

British philosopher do not stand as true to-day as when thirteen years ago they were spoken in this day when so far as science is concerned, the text-books of last year must be re-written for this, when "the goal of yesterday is the starting point for to-day." "But, overpoweringly, strong proofs of intelligent and benevolent

design lie all around us; and if ever perplexities, whether metaphysical or scientific, turn us away from them for a time, they come back upon us with irresistible force, showing us through nature, the influence of a Free Will, and teaching us that all living beings depend upon One ever-acting Creator and Ruler."

TECHNICAL EDUCATION.

THE educational world must welcome the appearance of the bulky volumes containing some of the results of the inquiries made by the Royal Commission on Technical Education. The first of these is occupied with details of the kind of instruction now given in the technical schools of almost every part of Europe. The industrial centres of the Continent have been thoroughly examined by the Commissioners, and they have placed on record a most interesting outline of their observations. The United Kingdom also has been carefully surveyed, and the reader is presented with a very copious description of all that is now being tried for the improvement of the British artisan. It is gratifying to find that the home country still holds its own in regard to the arts of construction and the staple manufactures as a whole, and that, even in the opinion of Continental manufacturers themselves, our people still maintain their position at the head of the industrial world. The report declares, indeed, that, "not only has nearly every important machine and process employed in manufactures been either invented or perfected in this country in the past, but it is not too much to say that most of the prominent new industrial departures of modern times are due

to the inventive power and practical skill of our countrymen." The people on the Continent were not satisfied, however, to sit unmoved while British excellence was so evident, and they bestirred themselves accordingly to establish technical schools for the improvement of their own workmen. They were lavish in providing funds to erect buildings, and they have shown great liberality in providing well-qualified teachers, who are paid adequate salaries to encourage them in their labours. The extent to which these schools have been provided, and all the various ways in which they are made to minister to the public welfare, will be found fully described in this most interesting report which now lies before us.

The Commissioners have been able to arrive at some definite conclusions, and to make various specific recommendations. They recognize the great benefits to be derived from an early training in handicraft—a theme on which we had lately some remarks to offer in our own columns. They recognize, however, along with every true educationist, that the best preparation for technical study of the higher order is a good modern secondary training; and as examples of the kind of thing which they consider excellent they mention the Manchester

Grammar School, the Bedford Modern School, and the Allen Glen's Institution, at Glasgow. Unfortunately, however, as they also point out, the middle classes of this country are at a great disadvantage compared with those of the Continent, for want of a sufficient number of schools. They have done well, therefore, in giving a word of advice as to the increased speed in reorganizing the endowments which are in many cases most shamefully abused. They suggest that in the educational curriculum of the new schools, the subjects of Latin and modern languages should form a very prominent part. It would be desirable even, they think, that in some of these schools, especially in large towns (where classical schools are not wanting), in order to provide for better teaching of these subjects, more particularly of mathematics, that the classical languages should be altogether excluded from the schemes of instruction. To secure a thoroughly efficient provision for the schools they think it desirable also that in the proposed reorganisation of local government, power should be given to important local bodies like the proposed Country Boards and the municipal corporations, to originate and support secondary and technical schools in conformity with the public opinion, for the time being, for their constituents.

The recommendations of the Commissioners will claim the attention of all who are connected with the administration of the Education Department, whether in elementary schools or in those which are allied to South Kensington for the purposes of Science and Art. In regard to public elementary schools the suggestions are six in number, and are as follows:—(a) That rudimentary drawing be incorporated with writing as a single elementary subject, and that instruction in elementary draw-

ing be continued throughout the standard. That the Inspectors of the Education Department, Whitehall, be responsible for the instruction in drawing; that drawing from casts and models be required as part of the work; and that modelling be encouraged by grant. (b) That there be only two class subjects instead of three in the lower division of elementary schools, and that the object lessons for teaching Elementary Science shall include the subject of geography. (c) That after reasonable notice a school shall not be deemed to be provided with proper "Apparatus of Elementary Instruction," under Article 115 of the Code, unless it have a proper supply of casts and models for drawing. (d) That proficiency in the use of tools for working in wood and iron be paid for as a "specific subject," arrangements being made for the work being done, so far as practicable, out of school hours; that special grants be made to schools in aid of collections of natural objects, casts, drawings, etc., suitable for school museums. (e) That in rural schools instruction in the principles and facts of agriculture, after suitable introductory object lessons, shall be made obligatory in the upper standard. (f) That the provision at present confined to Scotland, which prescribes that children under the age of fourteen shall not be allowed to work as full timers in factories and workshops, unless they have passed in the fifth standard, be extended to England and Wales. It will be seen that these suggestions have a very important bearing on the work of the elementary school, and on the subject of payment for the work which is performed. To join drawing with writing would be a much more reasonable thing than at present where it is wedded with spelling in a way that must have caused perpetual puzzlement to all but those who are the

pay-masters. Writing is writing, and spelling is spelling. The process by which the one is taught is absolutely distinct from the other. To combine the two is to injure both--at all events, it is not likely to help the penmanship. It is otherwise in the case of drawing, and the Commissioners have given an overwhelming amount of testimony in favour of the recommendations which they have now made. We invite the attention of our readers also to the suggestion that handicraft skill on the part of boys should be rewarded in the same

way as needlework is now on the part of the girls. In suggesting that the work should, as far as practicable, be done out of the regular school hours, they anticipate objections which might have been most reasonably raised against the proposal. That agriculture should receive due prominence in the rural schools, also, is one of those things that must meet with very general consent, so long as the conditions under which it is to be taught are not likely to be otherwise than reasonable.--*The School-master.*

WHAT IS A LIBERAL EDUCATION?*

BY PRESIDENT CHARLES W. ELIOT

THE general growth of knowledge and the rise of new literatures, arts, and sciences during the past two hundred and fifty years have made it necessary to define anew liberal education, and hence to enlarge the signification of the degree of bachelor of arts, which is the customary evidence of a liberal education. Already the meaning of this ancient degree has quietly undergone many serious modifications; it ought now to be fundamentally and openly changed.

The course of study which terminates in the degree of bachelor of arts ordinarily covers from seven to ten years, of which four are spent in college and three to six at school; and this long course is, for my present purpose, to be considered as a whole. I wish to demonstrate, first, that the number of school and college studies admissible with equal weight or rank

for this highly valued degree needs to be much enlarged; secondly, that among admissible subjects a considerable range of choice should be allowed from an earlier age than that at which choice is now generally permitted; and, thirdly, that the existing order of studies should be changed in important respects. The phrase, "studies admissible with equal weight or rank" requires some explanation. I use it to describe subjects which are taught with equal care and completeness, and are supported by the same prescriptions, and which win for their respective adherents equal admission to academic competitions, distinctions, and rewards, and equal access to the traditional goal of a liberal education, the degree of bachelor of arts. Coördinate studies must be on an equal footing in all respects: of two studies, if one is required and the other elective, if one is taught elaborately and fully and the other only in its elements, if honors and scholarships may be ob-

* This paper was read on the 22nd of February last before the members of the Johns Hopkins University, an institution which from the start has effectually promoted many of the reforms herein advocated.

tained through one and not through the other, if one may be counted toward the valuable degree of bachelor of arts and the other only toward the very inferior degree of bachelor of science or bachelor of philosophy, the two studies are not coordinate—they have not the same academic weight or rank.

The three principal propositions just enunciated lead to consequences which at first sight are repulsive to most men educated in the existing system. For example, it would follow from them that children might not receive the training which their fathers received; that young men educated simultaneously in the same institutions might not have knowledge of the same subjects, share precisely the same intellectual pleasures, or cultivate the same tastes; and that the degree of bachelor of arts would cease to indicate—what it has indicated for nearly three hundred years—that every recipient had devoted the larger part of his years of training to Latin, Greek, and mathematics. Proposals which lead to such results inevitably offend all minds naturally conservative. The common belief of most educated men in the indispensableness of the subjects in which they were themselves instructed, reinforces the general conservatism of mankind in regard to methods of education; and this useful conservatism is securely entrenched behind the general fact that anything which one generation is to impart to the next through educational institutions must, as a rule, be apprehended with tolerable precision by a considerable number of individuals of the elder generation. Hence, a new subject can only force its way very gradually into the circle of arts called liberal. For instance, it was more than a hundred years after the widespread revival of Greek in Europe before that language was established at Paris and Oxford as a regular

constituent in the academic curriculum; and physics and chemistry are not yet fully admitted to that curriculum, although Robert Boyle published his "New Experiments touching the Spring of the Air" in 1660, Galvani discovered animal electricity in 1790, Lavoisier analyzed water in 1783, and John Dalton published his "New System of Chemical Philosophy" in 1808. Indeed, so stout and insurmountable seem the barriers against progress in education, as we look forward, that we are rather startled on looking back to see how short a time what is has been.

It is the received opinion that mathematics is an indispensable and universal constituent of education, possessing the venerable sanction of immemorial use; but when we examine closely the matters now taught as mathematics in this country, we find that they are all recent inventions, of a character so distinct from the Greek geometry and conic sections which with arithmetic represented mathematics down to the seventeenth century, that they do not furnish the same mental training at all. As Whewell pointed out forty years ago, modern mathematics—algebra, analytic geometry, the differential and integral calculus, analytical mechanics, and quaternions—has almost put out of sight the ancient form of mathematical science. Leibnitz published his "Rules of the Differential Calculus" in 1684, Newton his "Method of Fluxions" in 1711, Euler his "Institutiones Calculi Integralis" in 1768-70; but Lagrange, Laplace, Monge, Legendre, Gauss, and Hamilton, the chief promulgators of what we now call mathematical science, all lived into or in this century. The name of this well-established constituent of the course of study required for the baccalaureate is old, but the thing itself is new. A brief citation from the conclusion of Whewell's *prolix*

discussion of the educational value of mathematics, in his treatise entitled "Of a Liberal Education," will explain and fortify the statement that the mental discipline furnished by the mathematics of Euclid and Archimedes was essentially different from that furnished by the analytical mathematics now almost exclusively in use:

"On all these accounts, then, I venture to assert, that while we hold mathematics to be of inestimable value as a permanent study by which the reason of man is to be educated, we must hold also that the geometrical forms of mathematics must be especially preserved and maintained, as essentially requisite for this office; that analytical mathematics can in no way answer this purpose, and, if the attempt be made so to employ it, will not only be worthless, but highly prejudicial to men's minds."

The modern analytical mathematics, thus condemned by Whewell, is practically the only mathematics now in common use in the United States.

Again, it is obvious that the spirit and method in which Latin has been for the most part studied during the present century are very different from the spirit and method in which it was studied in the preceding centuries. During this century it has been taught as a dead language (except perhaps in parts of Italy and Hungary), whereas it used to be taught as a living language, the common speech of all scholars, both lay and clerical. Those advocates of classical learning who maintain that a dead language must have more disciplinary virtue than a living one, would hardly have been satisfied with the prevailing modes of teaching and learning Latin in any century before our own. At any rate, it was a different discipline which Latin supplied when young scholars learned not only to read it, but to write and speak it with fluency.

I venture to inquire next how long

Greek has held its present place in the accepted scheme of liberal education. Although the study of Greek took root in Italy as early as 1400, and was rapidly diffused there after the fall of Constantinople in 1453, it can hardly be said to have become established at Paris as a subject worthy the attention of scholars before 1458 or at Oxford before the end of the fifteenth century. At Paris, for many years after 1458, Greek was taught with indifferent success, and its professors, who were mostly foreigners, were excluded from the privileges of regency in the University. Indeed, the subject seems to have long been in the condition of what we should now call an extra study, and its teachers were much in the position of modern-language teachers in an American college, which does not admit them to the faculty. Grocyn, Linacre, and Latimer, who learned Greek at Florence, introduced the study at Oxford in the last years of the fifteenth century; but Anthony Wood says that Grocyn gave lectures of his own free will, and without any emolument. It is certain that in 1578 the instruction in Greek which was given to undergraduates at Cambridge started with the elements of the language; and it is altogether probable that Greek had no real hold in the English grammar schools until the end of the sixteenth century. The statutes which were adopted by the University of Paris in the year 1600 define the studies in arts to be Latin, Greek, Aristotle's philosophy, and Euclid; and they make Greek one of the requirements for admission to the School of Law. It took two hundred years, then, for the Greek language and literature gradually to displace in great part the scholastic metaphysics which, with scholastic theology, had been for generations regarded as the main staple of liberal education; and this displacement was

accomplished only after the same sort of tedious struggle by which the new knowledges of the eighteenth and nineteenth centuries are now winning their way to academic recognition. The revived classical literature was vigorously and sincerely opposed as frivolous, heterodox, and useless for discipline; just as natural history, chemistry, physics, and modern literatures are now opposed. The conservatives of that day used precisely the same arguments which the conservatives of to-day bring forward, only they were used against classical literature then, while now they are used in its support. Let it not be imagined that the scholastic metaphysics and theology, which lost most of the ground won by Greek, were in the eyes of the educated men of twelfth to the sixteenth century at all what they seem to us. They were the chief delight of the wise, learned, and pious; they were the best mental food of at least twelve generations; and they aroused in Europe an enthusiasm for study which has hardly been equalled in later centuries. When Abélard taught at Paris early in the twelfth century, thousands of pupils flocked around his chair; when the Dominican Thomas Aquinas wrote his "Summa Theologiæ," and lectured at Paris, Bologna, Rome, and Naples, in the middle of the thirteenth century, he had a prodigious following, and for three centuries his fame and influence grew; when the Franciscan, Duns Scotus, lectured at Oxford at the beginning of the fourteenth century, the resort of students to the university seems to have been far greater than it has ever been since. We may be sure that these wonders were not wrought with dust or chaff. Nevertheless, the scholastic theology and metaphysics were in large measure displaced, and for three hundred years the classical literatures have reigned in their stead.

Authentic history records an earlier change of a fundamental sort in the list of arts called liberal, and consequently in the recognized scheme of liberal education. When Erasmus was a student, that is, in the last third of the fifteenth century, before Greek had been admitted to the circle of the liberal arts, the regular twelve years' course of study included, and had long included, reading, arithmetic, grammar, syntax, poetry, rhetoric, metaphysics, and theology, all studied in Latin; and of these subjects metaphysics and theology occupied half of the whole time, and all of the university period. But in the eleventh century, before Abélard founded scholastic theology, the authoritative list of liberal studies was quite different. It was given in the single line:

"Lingua, tropus, ratio, numerus, tonus, angulus, astra."

Most students were content with the first three—grammar, rhetoric, and logic; a few also pursued arithmetic, music, geometry, and astronomy, if these grave names may be properly applied to the strange mixtures of fact and fancy which in obscure Latin versions of Greek and Arabian originals passed for science. It was this privileged circle which scholastic divinity successfully invaded at the beginning of the twelfth century, the success of the invasion being probably due to the fact that religion was then the only thing which could be systematically studied.

This hasty retrospect shows, first, that some of the studies now commonly called liberal have not long held their present preeminence; and, secondly, that new learning has repeatedly forced its way, in times past, to full academic standing, in spite of the opposition of the conservative, and of the keener resistance of established teachers and learned bodies, whose standing is always supposed to be

threatened by the rise of new sciences. History teaches boldness in urging the claims of modern literatures and sciences to full recognition as liberal arts.

The first subject which, as I conceive, is entitled to recognition as of equal academic value or rank with any subject now most honoured is the English language and literature. When Greek began to revive in Europe, English was just acquiring a literary form; but when Greek had won its present rank among the liberal arts, Shakespeare had risen, the English language was formed, and English literature was soon to become the greatest of modern literatures. How does it stand now, with its immense array of poets, philosophers, historians, commentators, critics, satirists, dramatists, novelists, and orators? It cannot be doubted that English literature is beyond all comparison the amplest, most various, and most splendid literature which the world has seen; and it is enough to say of the English language that it is the language of that literature. Greek literature compares with English as Homer compares with Shakespeare, that is, as infantile with adult civilization. It may further be said of the English language that it is the native tongue of nations which are preeminent in the world by force of character, enterprise, and wealth, and whose political and social institutions have a higher moral interest and greater promise than any which mankind has hitherto invented. To the original creations of English genius are to be added translations into English of all the masterpieces of other literatures, sacred and profane. It is a very rare scholar who has not learned much more about the Jews, the Greeks, or the Romans through English than through Hebrew, Greek, or Latin.

And now, with all this wonderful

treasure within reach of our youth, what is the position of American schools and colleges in regard to teaching English? Has English literature the foremost place in the programmes of schools? By no means: a best only a subordinate place, and in many schools no place at all. Does English take equal rank with Greek or Latin in our colleges? By no means: not in the number and rank of the teachers, nor in the consideration in which the subject is held by faculty and students, nor in the time which may be devoted to it by a candidate for a degree. Until within a few years the American colleges made no demand upon candidates for admission in regard to knowledge of English; and now that some colleges make a small requirement in English, the chief result of the examinations is to demonstrate the woful ignorance of their own language and literature which prevails among the picked youth of the country. Shall we be told, as usual, that the best way to learn English is to study Latin and Greek? The answer is, that the facts do not corroborate this improbable hypothesis. American youth in large numbers study Latin and Greek, but do not thereby learn English. Moreover, this hypothesis is obviously inapplicable to the literatures. Shall we also be told, as usual, that no linguistic discipline can be got out of the study of native language? How, then, was the Greek mind trained in language? Shall we be told that knowledge of English literature should be picked up without systematic effort? The answer is, first, that as a matter of fact this knowledge is not picked up by American youth; and, secondly, that there never was any good reason to suppose that it would be, the acquisition of a competent knowledge of English literature being not an easy but a laborious undertaking for an average youth—not a matter of enter-

taining reading, but a serious study. Indeed, there is no subject in which competent guidance and systematic instruction are of greater value. For ten years past Harvard University has been trying, first, to stimulate the preparatory schools to give attention to English, and, secondly, to develop and improve its own instruction in that department; but its success has thus far been very moderate. So little attention is paid to English at the preparatory schools that half of the time, labour, and money which the University spends upon English must be devoted to the mere elements of the subject. Moreover, this very year at Harvard less than half as much instruction, of proper university grade, is offered in English as in Greek or in Latin. The experience of all other colleges and universities resembles in this respect that of Harvard.

This comparative neglect of the greatest of literatures in American schools and colleges is certainly a remarkable phenomenon. How is it to be explained? First, by the relative newness of this language and literature: it requires two or three hundred years to introduce new intellectual staples; secondly, by the real difficulty of teaching English well—a difficulty which has only of late years been overcome; and, thirdly, by the dazzling splendour of the revived Greek and Latin literatures when in the fourteenth and fifteenth centuries they broke upon the mind of Western Europe. Through the force of custom, tradition, inherited tastes, and transmitted opinions, the educational practices of to-day are still cast in the moulds of the seventeenth century. The scholars of that time saw a great light which shone out of darkness, and they worshipped it; and we, their descendants in the ninth generation, upon whom greater lights have arisen, still worship at the same shrine. Let us continue to worship there; but let

us pay at least equal honours to the glorious lights which have since been kindled.

The next subjects for which I claim a position of academic equality with Greek, Latin, and mathematics are French and German. This claim rests not on the usefulness of these languages to couriers, tourists, or commercial travellers, and not on their merit as languages, but on the magnitude and worth of the literatures, and on the unquestionable fact that facility in reading these languages is absolutely indispensable to a scholar, whatever may be his department of study. Until within one hundred or one hundred and fifty years, scholarship had a common language, the Latin; so that scholars of all the European nationalities had a perfect means of communication, whether in speaking, writing, or printing. But the cultivation of the spirit of nationality and the development of national literatures have brought about the abandonment of Latin as the common language of learning, and imposed on every student who would go beyond the elements of his subject the necessity of acquiring at least a reading knowledge of French and German, besides Latin. Indeed, the advanced student of our day can dispense with Latin better than with French, German, or English; for, although the antiquated publications in any science may be printed in Latin, the recent (which will probably contain all that is best in the old) will be found printed in one of these modern languages. I cannot state too strongly the indispensableness of both French and German to the American or English student. Without these languages he will be much worse off in respect to communicating with his contemporaries than was the student of the seventeenth century who could read and speak Latin; for through Latin the student of the year 1684 could

put himself into direct communication with all contemporary learning. So far as I know, there is no difference of opinion among American scholars as to the need of mastering these two languages in youth. The philologists, archaeologists, metaphysicians, physicians, physicists, naturalists, chemists, economists, engineers, architects, artists, and musicians, all agree that a knowledge of these languages is indispensable to the intelligent pursuit of any one of their respective subjects beyond its elements. Every college professor who gives a thorough course of instruction—no matter in what department—finds himself obliged to refer his pupils to French and German authorities. In the reference library of any modern laboratory, whether of chemistry, physics, physiology, pathology, botany, or zoology, a large proportion of the books will be found to be in French or German. The working library of the philologist, archæologist, or historian teaches the same lesson. Without a knowledge of these two languages it is impossible to get at the experience of the world upon any modern industrial, social, or financial question, or to master any profession which depends upon applications of modern science. I urge no utilitarian argument, but rest the claims of French and German for admission to complete academic equality on the copiousness and merit of the literatures, and the indispensableness of the languages to all scholars.

Such being the reasons for teaching French and German to all young scholars at an early stage of their training, what is the condition of these languages at American schools and colleges? For answer to this question I will describe the condition of instruction in French and German at Yale College, an institution, I need not say, which holds a leading position among American colleges. No know-

ledge of either French or German is required for admission to Yale College, and no instruction is provided in either language before the beginning of the Junior year. In that year German must be and French may be studied, each four hours a week; in the Senior year either language may be studied four hours a week. In other words, Yale College does not suggest that the preparatory schools ought to teach either French or German, does not give its students the opportunity of acquiring these languages in season to use them in other studies, and does not offer them any adequate opportunity of becoming acquainted with the literature of either language before they take the bachelor's degree. Could we have stronger evidence than this of the degraded condition of French and German in the mass of our schools and colleges? A few colleges have lately been demanding a small amount of French or German for admission, and a few schools have met this very moderate demand; but, as a general rule, American boys who go to college devote from two to three solid years to Greek and Latin, but study French and German scarcely at all while at school, and at college only for a part of the time during the later half of the course. The opportunities and facilities for studying Greek and Latin in our schools and colleges are none too great; but surely the opportunities and facilities for studying French and German are far too small. The modern languages should be put on an equality with the ancient.

The next subject which demands an entirely different position from that it now occupies in American schools and colleges is history. If any study is liberal and liberalizing, it is the modern study of history—the study of the passions, opinions, beliefs, arts, laws, and institutions of different races or communities, and

of the joys, sufferings, conflicts, and achievements of mankind. Philology and polite literature arrogate the title of the "humanities"; but what study can so justly claim that honourable title as the study which deals with the actual experience on this earth of social and progressive man? What kind of knowledge can be so useful to a legislator, administrator, journalist, publicist, philanthropist, or philosopher as a well-ordered knowledge of history? If the humanity or liberality of a study depends upon its power to enlarge the intellectual and moral interests of the student, quicken his sympathies, impel him to the side of truth and virtue, and make him loathe falsehood and vice, no study can be more humane or liberal than history. These being the just claims of history in general, the history of the community and nation to which we belong has a still more pressing claim upon our attention. That study shows the young the springs of public honour and dishonour; sets before them the national feelings, weaknesses, and sins; warns them against future dangers by exhibiting the losses and sufferings of the past; enshrines in their hearts the national heroes; and strengthens in them the precious love of country. One would naturally suppose that the history of the United States and England, at least, would hold an important place in the programmes of American schools and colleges, and that no subject would occupy a more dignified position in the best colleges and universities than history in respect to the number and rank of its teachers. The facts do not accord with this natural supposition. The great majority

of them) make no requirements in history for admission, and have no teacher of history whatever. Lest it be imagined that this can be true only of inferior colleges, I will mention that in so old and well-established a college as Dartmouth there is no teacher of history, whether professor, tutor, or temporary instructor; while in so excellent an institution as Princeton there is only one professor of history against three of Greek, and this single professor includes political science with history in his teaching. No institution which calls itself a college expects to do without a professor of Greek, or of Latin, or of mathematics; but nearly all of them do without a teacher of history. The example of the colleges governs the preparatory schools. When young men who are interested in historical study ask me if it would be advisable for them to fit themselves to teach history for a livelihood, I am obliged to say it would be the height of imprudence on their part, there being only an infinitesimal demand for competent teachers of history in our whole country. This humiliated condition of history is only made the more conspicuous by the old practice, which still obtains at some colleges (Harvard College, for instance), of demanding from all candidates for admission a small amount of Greek and Roman history—as much as a clever boy could commit to memory in three or four days. One hardly knows which most to wonder at in this requirement, the selection of topic or the minuteness of the amount. Is it not plain that the great subject of history holds no proper place in American education?—*The Century*.

(To be continued.)

RIENZI.

PRIZE POEM, TORONTO UNIVERSITY, 1884.

BY MARGARET E. HENDERSON, OSHAWA, ONT.

Methought I wandered one long day beneath
 The noon-day clearness of the Italian sky,
 And o'er the Palatinus roamed alone
 Amid the crumbling glory of old Rome,
 While Tiber's legendary stream oft kissed
 The shores, mute witnesses of many a scene,
 In whose historic fame the past still lives.
 By pillar, ivy-clad, or tottering wall
 I pondered long and deeply, till at last
 The hazy calmness of that summer day,
 And the low music of old Tiber's roll
 Soon soothed my senses into fitful sleep.
 Awhile they slept, when o'er my slumb'rous thought
 The thickly clustering memories of the past
 Claimed sovereignty, and, through the gaps of time,
 I breathed an older air, and drank my soul
 Of those old days, in inspirations strong.
 An earlier Italy I knew and loved,
 Ay, loved—though fallen from her glory's time,
 That time when Roman freemen were as kings,
 And the State's honour was to all her sons
 Dearer than life itself, dearer than love—
 Her proudest names were hollow memories,
 Not lofty aspirations, to whose height
 The youthful patriot, with longing look,
 A trembling, upward glance would fain direct.
 O sunny Italy, though loved, how changed
 From thy young loveliness—thy children, slaves.
 Thy fostered sciences, thine arts, forgot—
 And thy rich legacy of melody
 And deathless harmonies alike unsung!
 Alas! but slowly beat those pulses now,
 As, sluggishly, the life-blood courses from
 The once proud heart of Italy, whose fate
 My soul with sadness fills, when, lo! before
 My half-averted gaze, a beacon light
 Of brilliancy surpassing, a swift flash
 Of phosphorescent splendour shines amid
 Her mediæval gloom! The morning breaks;
 Italia's night of darkness ushers in
 The rosy dawn of freedom for her sons,
 Who from Rienzi's lips learn those grand names
 Emblazoned on the scroll of deathless fame,

Learn, too, their heritage, in promise rich,
 The Roman name, loved with a jealous love
 By those who kept it noble, and who charged
 Their sons to guard its honour jealously.
 And once again the heaven-enkindled flame,
 The love of freedom burns in Roman hearts,
 Whose quickened pulses tingle with new life
 At each new triumph won by peaceful arts,
 Once more a happy people lives in peace
 Amid the olive groves of Italy,
 And deep enthroned in the people's hearts,
 Rienzi rules as Tribune ; his the task
 To weld the Roman people, and to blend
 All lawless factions in the name of Rome.
 Yet vain the hope—for Freedom's rising beam,
 Flooding the eastern heavens, flashes swift
 A meteoric gleam—and all is dark.
 And 'mid the thickening darkness, sinks alone
 Rienzi, last of the Tribunes, and appalled
 At the wreck of empire, passionate I cry :
 "Thou that didst drink with rapture at the spring
 Whence Petrarch poured his soul in living verse,
 Did'st thou then fondly dream would live again
 The pristine glory of Imperial Rome ?
 Or did thy mind's clear vision view afar
 The onward hastening of the Golden Age,
 Once sung by him who tuned the Mantuan lyre ?
 'Twas truly sung, for Phoenix-like, arose
 Ev'n from the ashes of her buried hopes,
 A younger, sunnier, happier Italy.
 Nor did thy lofty spirit burn in vain,
 Since, like to thine, upon a later day
 A mind as keen, a heart as pure, sincere,
 Wrought freedom for the children of old Rome ;
 And while loved Italy is Freedom's home,
 Thy memory, with Garibaldi's name,
 The uncrowned sovereign of Caprera's isle,
 Shall live in virgin freshness, storied names."

* * * * *

My dream was over ; still around me played
 The soft Italian air, in sportive mood,
 Amid the branches straying fitfully ;
 Still stood the pillars in their grim decay,
 Hoar relics of the past, while Tiber rolled
 His many white-winged burdens to the sea,
 As ever-busy commerce filled the marts
 Of far-off nations ; and thy forum still
 Reverb'ing with the echoes of the tones
 Of vanished years, O Italy, breathes now
 A grander freedom than Rienzi dreamed,
 And from our Northern Isle, the north wind bears,

Not tributary greetings—though to thee
 She once owed fealty—but sundered far
 From thee by kindly seas, her great heart yet
 Goes out to thee in sympathy and hope,
 That in the marching of the centuries,
 Both she and thou, in Freedom's cause allied,
 May nurture still a happy people, rich
 In peace, in God-given sympathy and hope
 Of a diviner destiny to be.

THE HIGH SCHOOL CURRICULUM.

BY A. P. KNIGHT, M.A., RECTOR COLLEGIATE INSTITUTE, KINGSTON, ONT.

IF an intelligent business man were asked to take charge of our educational system, probably the first thing he would do would be to divide the work of secondary education amongst four distinct classes of High Schools, somewhat as follows :—

I.—*Classical Schools*, whose chief object should be preparing for Matriculation in Arts, Laws, or Medicine.

II.—*Normal Schools*, one in each county, whose work should consist in giving to second and third-class teachers their literary and professional education. The training of first-class teachers should be done in our Universities.

III.—*Technical Schools*, whose object should be the training of boys and young men for the various trades, and for mercantile life.

IV.—*Agricultural Schools*, whose special aim should be to furnish instruction in all those sciences having a direct and practical bearing on farming.

Immediately after this re-distribution of the work of secondary education, should follow the abolition of Mechanics' Institutes. As Institutions for imparting technical education they have been, and are, complete

failures, and the public grant now frittered away in eking out their struggling existence, might far better be spent in establishing a new class of High Schools to do the work which these Institutes have never done, and never will do. The professions are all very much overcrowded, and therefore no special plea need here be urged for maintaining Classical and Normal Schools. But nearly 3,000 of our High School pupils leave every year to engage in mercantile, agricultural, and other pursuits, and what special training, it may be asked, has the Education Department provided for these? Scarcely any. "Our Mechanics' Institutes," I quote from the last report of the Minister of Education, "are only circulating libraries." Not quite \$4,000, of the Government grant of \$25,000, are spent in providing practical instruction for those engaged in mechanical employment or manufactures; and, in 1882, only fifteen out of over 100 Institutes had technical classes at all. Skilled labour is one of the great wants of our country, and yet it seems to have been assumed by those who shaped our educational policy that no special training was needed by those intending to become artisans. There is, of course, an Agricultural College at Guelph, and a School of

* Preface to the Third Edition of "Chemistry for High Schools." By kind permission of Messrs. Copp, Clark & Co.

Practical Science at Toronto, but no one pretends to say that these institutions afford anything like general facilities for the acquisition of an education in agriculture or technology. To say that a classical training in our High Schools, followed by a college course in Arts, is the best preparation for business or for agriculture is simply to talk nonsense. Experience has shown that in this country few university graduates go into business and fewer still into farming.

"The elementary rules of the farmer's art are the simplest, and the rude practices of it the easiest; yet between the worst agriculture and the best lie agricultural chemistry, the application of machinery, the laws of the economy of force, and the most curious problems of physiology." . . . "Until the forces of nature in this land are conquered to man's use, the study of science in its various branches is an indispensable necessity. History, poetry, music, logic, moral philosophy, classical literature, are excellent as ornament; but as they must, in the present stage of our country's development, occupy the leisure part of life, so they should occupy the leisure part of education."

There is no good reason why secondary schools specially designed to teach science and technology should not be successful. Until county Model Schools were established throughout Ontario and proved successful, it was supposed that no instruction in pedagogy could be had outside of the Toronto and Ottawa Normal Schools. And until schools for the teaching of science, technology, and commerce are in successful operation in every city; and, others for the teaching of agriculture in every district, there will always be cranks and croakers who will insist that no education worthy of the name can be had outside of the four walls of a university. The German professors have not yet settled the case of

Science vs. Classics. A higher court must pronounce the final decision.

Notwithstanding complaints that too many subjects were taught in our schools, the whip of public opinion has of later years compelled the addition of one modern subject after the other, until at present there are some twenty-five optional or obligatory ones on the High School programme. Add to this the fact that under existing regulations each school is expected to prepare for Matriculation in Arts, Law or Medicine, for at least three grades of teachers' certificates, for admission to the Military College, for the Civil Service examinations, and lastly for Agriculture, and we have a state of affairs that might well appal any headmaster, even an Arnold. Amidst this terrible jumble of subjects and aims—"confusion worse confounded"—two or three teachers, in each school, bravely struggle to carry out the Departmental regulations, and especially to prepare their pupils to run the gauntlet of the examinations—honestly if possible, but through them at any cost.

If our High Schools are to continue their present rate of development—a development largely due to the energy and ability of the senior High School Inspector—the principle of the division of labour must soon be applied in apportioning the work to be done by them. A "fixed course" of study for each of our 104 schools is unnatural, unreasonable and impracticable. As every district should have its Agricultural School, so every city should have, besides its Classical School, a Technical and Commercial one, in which young men who do not desire to take a university course could be trained in English Literature, Elementary Mathematics, Chemistry, Physics, Free Hand Mechanical and Architectural Drawing, Physiology, Shorthand, Telegraphy, Bookkeeping, and the Elements of Political Economy.

GREEK VERSION.

BY W. H. C. KERR, M.A., BRANFORD.

ONWARD, CHRISTIAN SOLDIERS!

Δεῦτε, Χριστοῦ παῖδες.

ONWARD, Christian soldiers, marching as to war,

Δεῦτε, Χριστοῦ παῖδες, πόλεμος καλεῖ.

With the Cross of Jesus going on before !
Christ, the Royal Master, leads against the foe ;

ἴδ', Ἰησοῦ σταυρὸς ἡμᾶς προΐγει

Χριστὸς ὁ ἀρχηγός, ἐχθροῖς ἀντικρὶ,

Forward into battle, see His banners go !

ἰδοὺ, τὰ σημεῖα πρώταχος δέικιν'

Onward, Christian soldiers, marching as to war,

δεῦτε, Χριστοῦ παῖδες, πόλεμος καλεῖ,

With the Cross of Jesus going on before !

ἴδ' Ἰησοῦς αὐτὸς ἡμᾶς προΐγει.

Like a mighty army moves the Church of God,

Ὡς στρατεύμα μέγα, τίξει, ἀδελφοί,

By others, we are treading where the saints have trod ;

ἐπακολουθοῦμεν, ἧ οἱ ἅγιοι

We are not divided, all one body we,

οὐ σχιζόμεθ' ἡμεῖς, ἀλλ' ἐν ἐλπίδι

One in hope and doctrine, one in charity.

ἑσμέν ἐν, ἐν διδαχῇ καὶ ἐν ἐν χάριτι

Onward, Christian soldiers, etc.

δεῦτε, Χριστοῦ παῖδες, κ.τ.λ.

Crowns and thrones may perish, kingdoms rise and wane,

Στέφανοί τε θρόνοι εἰσὶ πρόσκαιροι,

But the Church of Jesus constant will remain ;

ἀλλ' ἐκκλησίᾳ Ἰησοῦ ἐμμενῆς αἰεὶ

Gates of hell can never 'gainst that Church prevail ;

ἧς κατισχύουσιν οὐ πύλαι ᾄδου,

We have Christ's own promise, which can never fail.

Ὅ τὸδ' ἔπος εἶπε τὸ παρέλθῃ οὐ

Onward, Christian soldiers, etc.

δεῦτε, Χριστοῦ παῖδες, κ.τ.λ.

Onward, then ye people, join our happy throng ;

Ἐν φίλαγγ' ἴοντες, λαοί, συμφώνῳ

Blend with ours your voices in the triumph song ;

ἴω καλλίνικέ ψάλλετε ψαλμῶ·

Glory, praise and honour, men and angels sing

δόξα, τιμὴ, κῆδος, τᾶνδρες κᾶγγελοι,

Thro' the countless ages, unto Christ the King.

ἔμνετ' εἰς αἰῶνας Χριστῷ βασιλεῖ.

Onward, Christian soldiers, etc.

δεῦτε, Χριστοῦ παῖδες, κ.τ.λ.

UNIVERSITY WORK.

MATHEMATICS.

ARCHIBALD MAC MURDOCH, M.A., TORONTO
EDITORSOLUTIONS TO PROBLEMS IN
MARCH NUMBER.

J. L. Cox, B.A., Coll. Inst. Collingwood.

1. Construct a triangle, having given the vertical angle, the base and the ratio of the sides.

1. Let BC be the given base. On BC describe a segment (BAC) of a circle, containing an angle equal to the given vertical angle. Divide BC in E in the ratio of the sides, bisect the arc BDC in D , join DE and produce it to A , join AB and AC , then ABC is the angle required. For $CA : AB :: CE : EB$ since triangle CAB is bisected by AD .

2. Having given an angular point of a triangle, the circumscribed circle and the centre of the inscribed circle, construct the triangle.

2. Let A be the given angular point, $ABDC$ the circumscribed circle, and O the centre of the inscribed circle. Join AO and produce it to D . From D at distance DO a circle, cutting ABC in B and C , join A, B , and C , then ABC is triangle required.

3. Given the straight line bisecting the vertical angle, and the perpendiculars drawn to that line from the extremities of the base, to construct the triangle.

3. Take EB equal to one perpendicular and BF to the other, in the same straight line EF . Produce EF to D , making $ED : DF$ as $EB : BF$. From B draw BG perpendicular to DE , equal to the straight line bisecting the vertical angle. Join OG and produce it to meet EC , which is perpendicular to ED at C , from F draw FA perpendicular to ED . ABC is the triangle

required, since ADF and CDE are similar triangles $ED : DF :: CE : AF$

\therefore (construction) $EB : BF :: CE : AF$ and angle $BEC =$ angle AFB .

$\therefore CBE$ and AFB are similar triangles \therefore angle $CBE =$ angle AFB .

\therefore angle $ABG =$ angle CBG , i.e., angle ABC is bisected by BG .

Q. E. F.

UNIVERSITY OF TORONTO.

ANNUAL EXAMINATIONS, 1884.

Junior Matriculation.

MATHEMATICS.

Examiner—W. J. Loudon, B.A.

1. Find the sixth root of 2565726409.

2. (a) A square number cannot be of the form $12n + 5$.

(b) The product of three consecutive numbers cannot be a perfect square.

$$\begin{array}{cc} 14 & 13 \\ 3 & 3 \end{array}$$

3. Divide $3 - 1$ by $3 - 1$.4. Simplify $a^2 \frac{(a+b)(a+c)}{(a-b)(a-c)} + \dots + \dots$ and reduce to lowest terms $\frac{8x^2 - 377x^2 + 21}{21x^2 - 377x^2 + 8}$

5. Solve the equations:

$$976063x^2 - 1952450x + 976063 = 0.$$

$$16x(x+1)(x+2)(x+3) = 9.$$

$$x\sqrt{2-y^2} - y\sqrt{1-x^2} = xy - \sqrt{1-x^2}$$

$$\sqrt{1-y^2} = 3.$$

6. Any two sides of a triangle are together greater than the third side.

7. Enunciate and prove Prop. 13, Bk. II.

8. To find the centre of a given circle.

ALGEBRA—HONOURS.

Examiner—Edgar Frisby, M.A.

1. Find the continued product of $(x+xy+y^2)(x^2-xy+y^3)(x^4-x^2y^2+y^4)(x^8-x^4y^4+y^8)$.

2. State and prove Horner's method of Synthetic Division.

Apply this method to find the value of $x^6 - 7x^5 + 16x^4 - 3x^3 - 9x^2 + 13x + 4$ when $x = 3$.

3. Find the highest common divisor of $2x^4 + x^3 - 20x^2 - 7x + 24$ and $2x^4 + 3x^3 - 13x^2 - 7x + 15$.

4. Find the continued product of the following quantities:

$$x - a\sqrt{-1}; x + a\sqrt{-1}; x + \sqrt[3]{3 + \sqrt{-1}}; x + \sqrt[3]{3 - \sqrt{-1}};$$

$$x - \sqrt[3]{3 + \sqrt{-1}} \text{ and } x - \sqrt[3]{3 - \sqrt{-1}}$$

and prove that

$$\sqrt{4 + 3\sqrt{-20}} + \sqrt{4 - 3\sqrt{-20}} = 6.$$

5. Solve the equations

(1) $x^2 - 7 = \sqrt{x^2 - 42x + 89}$

(2) $x^2 + x^2 \sqrt{xy^2} = 208$

$$y^2 + y^2 \sqrt{x^2y} = 1053$$

6. State the laws governing the reduction of inequalities, and prove that

$$a^2b > (a+b-c)(b+c-a)(c+a-b) < \left(\frac{a+b+c}{3}\right)^3$$

a, b and c being any positive numbers whatever.

7. Find the limiting values of $\frac{x^2 + ax + b}{x^2 + cx + d}$.

8. Find the limit of the sum of a geometrical series whose first term is given, the common ratio being less than unity.

The first term of a geometrical series is $\frac{1}{2}$, and the common ratio $\frac{1}{3}$, find the limit of the sum of the series.

9. Find the number of permutations of n letters, of which p are a 's, q are b 's, r are c 's, etc.

How many different permutations can be made of the letters in the word mammalia taken all together?

10. Write down the expansion of $(1+x)^n$ and deduce that of $\frac{1}{\sqrt{1-x^2}}$, and prove that

$$1 + 3\left(\frac{2n+1}{2n-1}\right) + 5\left(\frac{2n+1}{2n-1}\right)^2 + \dots (2n-1)$$

$$\left(\frac{2n+1}{2n-1}\right)^{n-1} = n(2n-1) \quad n \text{ being an integer.}$$

11. Find the greatest term in the expansion of $(1+x)^n$ whenever possible.

What is the number and magnitude of the greatest term in the expansion of $(1-x)^n$ when $x = \frac{1}{3}$.

EUCLID—HONOURS.

Examiner—T. W. Wright, B.A.

1. The greater side of every triangle is opposite to the greater angle.

In a scalene triangle, compare the sums of the altitudes and of the median lines.

2. Write out the geometrical meaning of the following identical equations, drawing the necessary figures:

$$a(a+b) + b(a+b) = (a+b)^2.$$

$$(a+b)^2 + (a-b)^2 = 2a^2 + 2b^2.$$

3. Show that two circles may have four, three, two, one, or no common tangents, and explain how to draw the tangents in the possible cases.

4. Inscribe a square in a quadrant of a circle, and also in a semicircle, and compare their areas.

5. Write a short essay on Euclid's doctrine of proportion.

6. Divide a triangle into two equal parts:

(1) By a line parallel to a given line.

(2) By a line perpendicular to the base of the triangle.

7. Find the arithmetic, geometric and harmonic means between two given straight lines.

From your figures infer the relative magnitudes of the three means.

8. Construct a triangle, being given:

(1) The middle points of the three sides.

(2) The three altitudes.

9. Inscribe a square in a given pentagon.

10. Similar polygons may be divided into the same number of similar triangles, which are to each other as the polygons themselves, and the polygons are to one another as the squares of their homologous sides.

If a square inch on a drawing represents a surface of 484 square yards, what is the scale of the drawing?

11. Of the three squares which can be inscribed in a given triangle give the greatest.

12. "Take any circle with diameter AB ; divide AB into 5 equal parts; now, with A as centre and a radius AB , describe arcs at D and C ; from D draw lines through the divisions in AB to the circumference of the circle, and do the same from C . The 10 points so joined will be the vertices of a regular polygon of 10 sides." (*Scientific American* supplement, May 17, 1884.)

Is this true? Give reasons for your answer.

TRIGONOMETRY—HONOURS.

Examiner—T. W. Wright, B.A.

1. Find the value of

- (1) $(a+b)\cos 180^\circ + (a-b)\sin 90^\circ + 2b\tan 45^\circ$
 (2) $\log \cos 60^\circ, \log \tan 45^\circ, \log \operatorname{cosec} 30^\circ$.

2. Find the expressions for the trigonometric functions of $90^\circ + a$ in terms of the functions of a .

3. Show from a figure that $\sin 2a < 2 \sin a$.

4. Prove the formulas

$$(1) (\cos a - \cos \beta)^2 + (\sin a - \sin \beta)^2 \\ = 4 \sin^2 \frac{a - \beta}{2}.$$

$$(2) \cos 60^\circ - \cos 36^\circ - \cos 72^\circ.$$

$$(3) \frac{\cos a - \cos \beta}{\cos a + \cos \beta} + \tan \frac{1}{2}(a + \beta) \tan \frac{1}{2}(a - \beta) = 0.$$

$$(4) \sin(A - B) \sin C + \sin(B - C) \sin A + \sin(C - A) \sin B = 0.$$

5. Solve the equations ($a < 360^\circ$).

$$(1) \sin a = \frac{1}{2}.$$

$$(2) 3 \tan^2 a + \sec^2 a = 5.$$

6. ABC is a triangular field, B is 100 feet S. of A , and 200 feet S. S. W. of B , find the length of fence that will enclose the field.

7. In a scalene triangle the angle A is 60° , show that $b+c = \sqrt{a^2 + 3bc}$.

8. When the altitude of the sun is $22^\circ 30'$, find the length of the longest shadow that can be cast by a straight rod 12 feet in length.

9. Find the formula for the area of a parallelogram in terms of

- (1) Two adjacent sides and their included angle.
 (2) The diagonals and their included angle.

10. Each diagonal of a regular pentagon is 10 in., find the area of the pentagon.

11. Solve the triangles

$$a = 177.01, b = 216.45, A = 35^\circ 36' 20''.$$

$$a = 748, b = 375, C = 63^\circ 35' 30''.$$

NUMBER	LOG.	ANGLE.	LOG.
17701	24800	$35^\circ 36' 20''$	L. sin $9^\circ 76507$
21645	33536	$45^\circ 23' 28''$	L. sin $9^\circ 85215$
30024	47755	$63^\circ 35' 30''$	L. sin $9^\circ 95214$
51674	71327	$58^\circ 12' 15''$	L. tan $0^\circ 207766$
11230	05039	$28^\circ 10' 52''$	L. tan $9^\circ 72808$
37300	57171	$30^\circ 1' 23''$	L. sin $9^\circ 60027$
37500	57403	$99^\circ 0' 12''$	L. sin $9^\circ 99462$
67127	82690	$9^\circ 7' 48''$	L. sin $9^\circ 23034$
20000	30103		

EDUCATION DEPARTMENT, ONTARIO.

JULY EXAMINATIONS, 1884.

First Class Teachers—Grade C.

ALGEBRA.

Examiner—J. A. McLellan, LL.D.

NOTE.—Ten questions will constitute a full paper.

1. Divide $x^2 - 5qx + 4r$ by $(x - m)$.

Find the relation between q and r , in order that the remainder may vanish.

$$1. \text{ Quotient is } x^2 + 2mx^2 + 3m^2x - 4m^2 \\ \frac{5m^2x + 5qx - 4r - 4m^2}{(x - m)^2}$$

∴ in order that remainder may vanish

$$5(m^2 - q)x + 4(r - m^2) = 0, \text{ for all values of } x.$$

$$\therefore \begin{cases} m^2 - q = 0 \\ r - m^2 = 0 \end{cases} \text{ and } \sqrt{r} = \sqrt{q}.$$

2. When is any expression symmetrical with respect to two or more of the letters it involves?

$$(1) \text{ Find the square root of } 3 \left\{ (a+b+c+d)^2 + (b+c+d+e)^2 + (c+d+e+a)^2 + (d+e+a+b)^2 + (e+a+b+c)^2 - (a^2 + b^2 + c^2 + d^2 + e^2) \right\}.$$

$$(2) \text{ Simplify } \frac{(a-b)^2 - (b-c)^2}{a^2 + ab - bc - c^2} \\ + \frac{(b-c)^2 \cdot (c-a)^2}{b^2 + bc - ca - a^2} + \frac{(c-a)^2 - (a-b)^2}{c^2 + ca - ab - b^2}.$$

2. (1) Let $x = a + b + c + d + e$, then given expression

$$3. \quad x - e^2 + \text{etc.} = (a^2 + b^2 + c^2 + d^2 + e^2) \\ = 3 \{ 5x^2 - 2x(a + b + c + d + e) \}$$

$= 9x^2$, substituting x for $a + b + c + d + e$, and $3(a + b + c + d + e)$ is square root sought.

(2) 0.

3. Show that $(x - a)^2 + x^2 a^2 + (x^2 - ax + a^2)^2$ is exactly divisible by $x^2 - 2ax + 2a^2 - a^2$.

Find the factors of $(a^2 - b^2)^2 + (b^2 - c^2)^2 + (c^2 - a^2)^2$.

3. Divisor $= (x - a)(x^2 - 2ax + a^2)$, the expression $(x - a)^2 + x^2 a^2 + (x^2 - ax + a^2)^2$ vanishes when $x = a$, and is therefore divisible as stated.

Writing $x = a^2 - b^2$, and $y = b^2 - c^2$, and $x + y = a^2 - c^2$ the given expression becomes $x^2 + y^2 - (x + y)^2$.

$$x^2 + y^2 - (x^2 + 2xy + y^2) = -2xy \\ = -2(x^2 + y^2) \left\{ \frac{xy}{x^2 + y^2} \right\}$$

$$= -2xy(x + y) \left\{ \frac{xy}{x^2 + y^2} \right\}$$

$$= -2xy(x + y) \left\{ \frac{xy}{x^2 + y^2} \right\}$$

\therefore re-substituting for x, y and $x + y$, given expression $= -5(a^2 - b^2)(b^2 - c^2)$

$$(a^2 - c^2) \left\{ (a^2 - b^2)^2 + (a^2 - b^2)(b^2 - c^2) + (b^2 - c^2)^2 \right\} \\ = 5(a^2 - b^2)(b^2 - c^2)(c^2 - a^2) \left\{ a^4 - b^4 + c^4 - a^2 b^2 - b^2 c^2 - c^2 a^2 \right\}$$

4. Show how to extract the square root of a quantity of the form $a + b\sqrt{-1}$.

(1) Find the square root of $-3 - \sqrt{-16}$.

(2) Show that one of the fourth roots of -64 is $2(1 + \sqrt{-1})$.

4. Bookwork.

(1) Given expression $= -(3 + 4\sqrt{-1})$, extracting square root of $3 + 4\sqrt{-1}$ in ordinary way we find it to be $(2 + \sqrt{-1})$, and square root required is $-1 + 2\sqrt{-1}$.

(2) Required $2\sqrt[4]{2(-1)^3} = R$, say in $x^4 + 1 = 0$, put $x + \frac{1}{x} = z$ and $z^2 - 2 = 0$, thus $z = \pm \sqrt{2}$, therefore $(x^2 + x\sqrt{2} + 1)(x^2 - x\sqrt{2} + 1) = 0$, one of the roots of $x^2 - x\sqrt{2} + 1 = 0$, is $\frac{1 + \sqrt{-1}}{\sqrt{2}}$ and $R = 2(1 + \sqrt{-1})$

5. Solve the equations $ax + by = c, a'x + b'y = c'$.

Interpret the result when $\frac{a}{a'} = \frac{b}{b'} = \frac{c}{c'}$.

5. Bookwork. See Tollhunter's Algebra (larger) where, in chapter on simultaneous equations, the whole subject is discussed.

6. Solve the equations—

$$(1) \quad \frac{ax+b}{a+bx} + \frac{cx+d}{c+dx} = \frac{ax}{a} + \frac{b}{bx} + \frac{cx+d}{c+dx}$$

$$(2) \quad \frac{x}{b+x} + \frac{y}{c-y} = a + b.$$

$$\frac{y}{c+a} + \frac{z}{a-b} = b+c.$$

$$\frac{z}{a+b} + \frac{x}{b-c} = c+a.$$

$$6 \quad \frac{ax+b}{a+bx} - \frac{ax-b}{a-bx} = \frac{cx-d}{c-dx} - \frac{cx+d}{c+dx} \\ \frac{2ab(1-x^2)}{a^2-b^2x^2} = \frac{2cd(x^2-1)}{c^2-d^2x^2}$$

$\therefore 1 - x^2 = 0$, and $x = \pm 1$.

$$\text{or } \frac{ab}{a^2-b^2x^2} = \frac{cd}{c^2-d^2x^2}$$

$$ab^2 - abd^2x^2 = b^2cdx^2 - a^2c^2 \\ a^2(a+b) = bd^2x^2(ad+bc)$$

$$\text{and } x^2 = \frac{a^2c^2(a+b)}{bd(ad+bc)}$$

$$x = \pm c \sqrt{\frac{a(a+b)}{ba(ad+bc)}}$$

or $x = \pm 1$.

(2) By inspection we see at once that the roots are

$$x = b^2 - c^2, \\ y = c^2 - a^2, \\ z = a^2 - b^2.$$

These may also be obtained by cross multiplication.

7. Find the relation between the roots and co-efficients of the equation $x^2 + px + q = 0$.

If the difference of the roots of the equation $x^2 - (m-a)x + b^2$ is equal to the difference of the roots of the equation $x^2 + (m-b)x + a^2$, show that $2m = 5(a+b)$.

7. If α and β be the roots of the equation $x^2 + px + q = 0$, then $\alpha - \beta = \pm \sqrt{p^2 - 4q}$ making the necessary substitutions the result given, viz.: $2m + 5(a+b)$ follows at once.

8. Prove that $\frac{a-b}{1+ab} + \frac{b-c}{1+bc} + \frac{c-a}{1+ca}$
 $= \frac{a-b}{1+ab} \cdot \frac{b-c}{1+bc} \cdot \frac{c-a}{1+ca}$.

8. Transposing and simplifying
 $\frac{a-b}{1+ab} \left(1 - \frac{(b-c)(c-a)}{(1+bc)(1+ca)} \right)$
 $+ \frac{b-c}{1+bc} + \frac{c-a}{1+ca} = 0$.

$\frac{a-b}{1+ab} \cdot \frac{(1+c^2)(1+ab)}{(1+bc)(1+ca)}$
 $+ \frac{(1+c^2)(b-a)}{(1+bc)(1+ca)} = 0$.

if $1 - 1 = 0$.

Q.E.D.

9. Solve the equations

- (1) $x^3 + y^3 = a$,
 $xy(x+y) = b$.
- (2) $(x^3 + x^2y + xy^2 + y^3)(x+y) = a$,
 $(x^3 - x^2y + xy^2 - y^3)(x-y) = b$.
- (3) $\sqrt[3]{x + \sqrt{2}} + \sqrt[3]{x - \sqrt{2}} = \sqrt{2}$.

9. Let $y = vx$, then substituting for y and dividing we have $\frac{1-v+v^2}{v} = \frac{a}{b} = c$ say

whence $v = 1$ etc. $-c, y = x$ etc. $-cx$, whence x and y are readily obtained.

(2) We have $(x^2 + y^2)(x+y)^2 = a$,
 $(x^2 + y^2)(x-y)^2 = b$.

$\therefore \frac{x+y}{x-y} = \pm \sqrt{\frac{a}{b}} = \pm c$ say, whence x and y .

10. Show that if the arithmetical and geometrical means of two quantities be given, the quantities themselves may be found, and give expressions for them.

(1) Sum the series

$1 - \frac{2}{m} + \frac{1}{m^2} - \frac{2}{m^3} + \frac{1}{m^4} - \text{etc., ad inf.}$

(2) Show that the sum of n terms of the series $1 + 3 + 7 + 15 + \dots + (2^n - 1)$ is $2^{n+1} - (n+1)$.

(3) Write down four terms of the series

whose n^{th} term is $\frac{4n^2 - 1}{4n^2 + 1}$.

10. Let a and b be the two quantities, a and b their arithmetic and geometric means respectively, then

$x + y = 2a$,
 $\sqrt{xy} = b$.

$\therefore x - y = \pm 2\sqrt{a^2 - b^2}$, whence x and y .

(1) $S = 1 + \frac{1}{m^2} + \frac{1}{m^4} + \dots$

$-\frac{2}{m} \left(1 + \frac{1}{m^2} + \dots \right) = \frac{1 - \frac{2}{m}}{1 - \frac{1}{m^2}}$

(2) $S = 2 + 2^2 + \dots + 2^n - n$
 $= \frac{2^{n+1} - 2}{2 - 1} - n = 2^{n+1} - (n+2)$.

(3) $\frac{3}{5}, \frac{15}{17}, \frac{35}{37}, \frac{63}{65}$.

11. The number of combinations of $n+1$ things 4 together is 9 times the number of combinations of n things 2 together; find n .

11. $n = 11$.

12. Show that there are only $n+1$ terms in the expansion of $(1+x)^n$ when n is a positive integer.

- (1) Write down the 5th term of $(1-x)^{-\frac{3}{2}}$.
- (2) Write down the middle term of $(1+x)^{2n}$.

12. Bookwork.

(1) 5th term of $(1-x)^{-\frac{3}{2}}$

$= \frac{2}{3} \left(\frac{2}{3} + 1 \right) \left(\frac{2}{3} + 2 \left(\frac{2}{3} + 3 \right) \right)$
 $\left[\frac{4}{3} \right] x^4$.

(2) Middle term of

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

CLASSICS.

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

UNIVERSITY OF TORONTO.

ANNUAL EXAMINATIONS: 1884.

Junior Matriculation.—Arts and Medicine.

LATIN.

Examiner: William Dale, M. A.

I.

Translate:

His mihi rebus, re experti
 probare possitis.

—CICERO, *Cato Major*.

1. Parse *extorquere, comensit, sentiam, ex-
fert*.

2. Explain the use of the conjunctives *cre-
dum* and *dicere*.

3. *Lexis*. Mark the quantity of the penult.

4. *Minuti philosophi*. Explain. Who are
meant?

II.

Translate:

Tum satus Anchisa lat-
ratus in auras.

—VIRGIL, *Aeneid*.

1. Parse *satus, Anchisa, anhelans, tendunt*.

2. *Magnum dist ferre talentum*. Explain
the syntax.

3. Write brief explanatory notes on *mag-
num talentum, Macandreo, Meliboea*.

4. Compare *acer* and *similis*, and decline
Alamydem in the sing.

III.

Translate:

Tempore crevit amor. sup-
posuisse fuit.

—OVID, *Fasti*, Bk. I.

1. *Pluris*. Explain the syntax, and de-
cline the singular.

2. Give the principal rules for the structure
of the Ovidian distich, and scan the first two
lines of the extract.

LATIN GRAMMAR.

I.

Examiner: George H. Robinson, M.A.

1. Decline in combination *ille vir senex,
illum majus opus* and *plausus multiplex*.

2. Define and illustrate the terms epicene,
root, increment, supine, and subjective geni-
tive.

3. What is the meaning of gender in Latin
Grammar? Give rules with exceptions for
gender of the second declension.

4. Write down the genitive sing., the
gender, and penult quantity of *foedus, as, lex,
cardo, grex, tellus, unguis, faber, Jupiter,
tbur*.

5. Distinguish *dūcis, dūcis; mālīs, mālīs;
cer, ācer; cūmīs, cūmīs; mīdētīs, mīdētīs*.

6. Latin for: one letter; two camps; the
114th legion; 1,100,000 soldiers.

7. Compare *frugi, falsum, intus, faūis,
cognus*.

8. Principal parts of *leo, lego, cado, maneo,
flo, augeo, lavo, figo, pendeo*.

9. Compound *fero* with *a-*, *ob-*, *cum*, *ad-*.
quarre with *ad-*, *audio* with *ob-*, *cano* with
um, *ago* with *per-*, *circum*, *lego* with *inter-*.

10. Give the case-construction of *consulio,
cir, umido, ego, refert, juro, celo*.

11. Translate and give the syntax of the
italicised words in: (a) *solvendo esse*; (b)
Hoc Caesaris parati refe-; (c) *gens humana
audax omnia perpeti tuit*; (d) *Pro te eo*; (e)
Pater patriae aulies; (f) *Cui homo fuit?*
(g) *Sine te exorem mi pater*. (h) *Pro eo
ac potui*. (i) *Pontem faciendum* conduxit.

12. Express in *oratio obliqua*.

Deinde dux, Arcem hostium exclamavit
statim expugnare mihi in animo est. Quis
mecum erit comites? Expectatisne donec
hostes ultro arma tradant? Ultrum dux an
servus vester sum? Expergiscimini, festinate,
arma parate, ne occasionem belli con-
ficiendi amittamus!

GREEK—PASS.

Examiner: Adam Carruthers, B.A.

I.

Translate:

Πρὸς ταῦτα μεταστάντες
ἡμεῖς παρέξομεν.

—XENOPHON, *Anabasis*, II.

1. Sketch after Xenophon the respective
characters Clearchus, Proxenus and Menon.

2. Parse *μεταστάντες, προχῆνθημεν,
λυποῖν, ἀμύνασθαι, ἦκω, and μεόντων*.

3. (a) *οἶσθα. ἀπαγγεῖλαι*. Write out
these tenses fully. (b) Decline *ταῦτα* and
δύναμιν.

4. *ἀρχῆς, τοῦτου*. Explain the syntax of
these words.

5. Give the principal parts of *ἀπεκρί-
νατο, εὑρισκεν, and ἐωρῶμεν*.

II.

Translate:

Οἱ δὲ θεοὶ Μενέλαος
ᾄγοιτο.

—HOMER, *Iliad*, IV.

1. Parse ἡγορόωντο, ἐπινοοῦσι, Δειδέχαι, παρμέμβλωκε, ὄρσομεν, and βάλομεν, commenting on any dialectical, etymological, or other peculiarities.

2. Scan the first two verses.

3. Ἀλασκομενηῖς. Why so called?

4. What similes does Homer use in Book IV.?

5. Derive δαπέδω, Νέκταρ, πόλεμον, ἡδὴ, and Ἐλένην.

L. LATIN PROSE.

Examiner: William Dale, M. A.

NOTE.—Pass Candidates will take the first passage only. Honor Candidates will take both passages.

I.

Translate:

Homer tells us how Zeus and Poseidon and Pluto divided the empire which they inherited from their father. Now, in the days of Cronos there was this law respecting the destiny of men, which has always existed and still continues in heaven, that he who has lived all his life in justice and holiness shall go, when he dies, to the islands of the blest, and dwell there in perfect happiness out of the reach of evil, but that he who has lived unjustly and impiously shall go to the house of vengeance and punishment which is called Tartarus. And in the time of Cronos, and even later in the time of Zeus, the judgment was given on the day on which the men were to die; the judges were alive and the men were alive; and the consequence was that the judgments were not well given.

II.

Then Pluto and the authorities from the islands of the blest came to Zeus and said that the souls found their way to the wrong places. Zeus said: "I shall put a stop to this; the judgments are not well given, and the reason is that the judged have their clothes on, for they are alive; and there are many having evil souls who are apparelled in fair bodies, or wrapt round in wealth and rank, and when the day of judgment arrives

many witnesses come forward and witness on their behalf, that they have lived righteously. The judges are awed by them, and they themselves too have their clothes on when judging, their eyes and their ears and their whole bodies are interposed as a veil before their own souls. This all stands in the way."

LATIN—HONORS.

Examiner: George H. Robinson, M. A.

I.

Translate:

In civitate bellum gesturos.

—LIVY IX.

1. Parse: *ardente, fiat, ictum, hisce, eo*.

2. Explain: *feciales, apparitor, tribunal, jus genitum, justius bellum*.

3. *Noxam nocuerunt*. Give other examples of the same construction.

4. *Sponderunt*. Analyse this word, giving every addition to the root.

II.

Translate:

Virtus recludens poena claudo.

—HORACE, *Odes* III.

1. Parse: *recludens, mori, spernit, vetabo, solvat*.

2. Explain the syntax of: *mori, v. zrit, pede, sit*.

3. Derive: *coetus, udam, fragilem, phaselon, Diespiter*.

4. Give scale of the stanza.

Translate:

Coelo supinas tempus anno. —*Id.*

1. Derive: *supinas, Phidyle, horna, nec, aut*.

2. Distinguish: *manus, palma; fruges, fractus; dulcis, suavis; aut, vel; tempus, tempestas*.

3. Write brief notes on proper names.

4. What metrical peculiarity in the extract?

Translate:

Vos quoque, alumna Ceres.

—OVID, *Fasts* I.

1. What peculiarity in the inflection of *frugibus, date, lalet, ulla, domui*?
2. Write brief explanatory notes on: *pagi, usta, vitis caeli, passuri bis ignem, domi tuae.*
3. *Firnore.* What was the law of interest at Rome? What was the unit of interest?
4. Point out any peculiarities of syntax in the passage.
5. Form diminutives from: *oculus, ager, equus.*

IV.

1. Give the chief rules for the final syllable of the pentameter.
2. Briefly explain the Roman method of dividing time.
3. Point out from the Third Book of the Odes Horace's opinion of what a Roman patriot should be.
4. Name the chief Roman historians, with the periods of history covered by them.

V.

Translate:
 Quum aliud, praeter quam
 putent quid agatur.

—LIVY III.

GREEK—HONORS.

Examiner: Adam Carruthers, B.A.

I.

Translate:
 Ἰλιόθεν με φέρων . . . μόρον
 τε.

—HOMER, *Odyssey*, IX.

1. Parse ἔπραθον, μοι, κιοι, ἴσσης, ἡνώγεα, πίνετο, γεγώνευν, παρέστη, and κλίναν.
2. Scan any spondaic lines in the extract.
3. καὶ ὅθι χρῆ κ.τ.λ. Supply the ellipsis so as to show the construction clearly.
4. (a) ἦλθον ἔπειθ κ.τ.λ. What English poets make similar comparisons?
 (b) ἦμος δ' ἠέλιος μετενίσσεται βουλήνδε. Illustrate from the third book of the Odes of Horace.
5. Write brief explanatory notes on *Homeric Questions, Digamma* and *Diasceuaste.*

Translate:

Ἄνδρα μοι . . . εἰπέε καὶ ἡμῖν.

—*Ib.* I.

II.

Translate:

Εἴτε γὰρ ἰμῶν . . . τῶν πραγμάτων.

—DEMOSTHENES, *Olynthiacs* I.

1. (a) Parse ἀμυνεῖται, προσκαθεδεῖται, δεῖ, ἔλεσθε, and ἀντιλάβεσθε.
 (b) Compare ῥαδίως, πολλά, and ὀλίγων.
2. (a) Mark the quantity of penult in ἀκινδύνως.
 (b) Distinguish οἴκοι, οἰκοῖ, and οἶκοι.
3. μὰ Δι' οὐκ ἔγωγε. Why not? Narrate the events leading to the delivery of this oration.
4. Give the etymology of οἴκοι, ἀμυνεῖται, ἀκινδύνως, βοήθειαν, and καιρὸς.
5. Translate into Greek:—"I think I have said what I consider to be for the best. May you adopt that course which is likely to benefit both the state and yourselves."

Translate:

Τί οὖν ποτ' αἴτιον . . . ἡττᾶσθαι ἐνόμιζον.

Ib., *Philippics* III.

GREEK GRAMMAR—HONORS.

1. Correct, where necessary, the spelling of the following words, giving your reasons for so doing:—πράξις, ἔτρεπθην (τρέφω), ἴδμεν, ὄφρα, τιμασίητε, ἐπτήμερος, βουλεύσαι, ὥστε, σωθήθι, σῶματος, and τιμάειν.
2. Decline πῦρ, οὖς, πειθῶ, γυνή, and κέρας.
3. Compare πίων, λάλος, πένης, ἀλγεινός, καλός, and ἐπίχαρις.
4. Express in Greek numerical symbols 15, 526, 2344, and 1862.
5. Give the principal parts of the verbs which have the following stems:—πετ, λαχ, πι, σεχ, ιδ, παθ, and σεμ, explaining any peculiarities or anomalies in the formation of their several tenses.
6. Give sentences in Greek to illustrate the various uses of ἄν. In what case is ἄν used more than once in the same clause?

Distinguish ἄν from ἄν, εἶν from εἶν and ἦν from ἦν.

7. Translate and explain peculiarities of syntax in the following:—

(a) εἶθ', ὄφελος τοιαύτην γῶμην πατρὸς θνησκόντος εἶναι.

(b) τὸ λεγόμενον, κάτοπιν τῆς ἐορτῆς ἦκομεν.

(c) οὐ μὴ παύσωμαι φιλοσοφῶν.

(d) οὔτε μέγα οὔτε σμικρὸν ξύνοίδα ἐμαπτῶ σοφὸς ὢν.

8. Translate into Greek:

(a) They surrendered on the condition that they should leave the Peloponnese under truce and never again set foot (ἐπιβαίνω) on it.

(b) The river is of so great a depth that even the spears could not reach (ὑπερέχω) the bottom.

(c) Whenever they said "no" they led them off and executed them.

(d) They did not believe (ἀπιστῶ) that those who had given up (part.) their arms were (inf.) like those who had fallen (part.).

MODERN LANGUAGES.

JOHN SEATH, B.A., ST. CATHARINES, EDITOR.

NOTE.—The Editor of this Department will feel obliged if teachers and others send him a statement of such difficulties in English History, or Moderns, as they may wish to see discussed. He will also be glad to receive Examination Papers in the work of the current year.

UNIVERSITY OF TORONTO.

ANNUAL EXAMINATION: 1884.

Junior Matriculation.

ENGLISH.

ARTS—FOR PASS. MEDICINE—FOR PASS AND HONOURS.

Examiners: Edward B. Brown, B.A., David R. Keys, B.A.

* * * Parts I. and II. are for all Candidates. Part III. is for Candidates for Honours in Medicine only. Parts IV. and V. are for Candidates in Arts only.

I. COMPOSITION.

Write on one of the following subjects:

(a) Poetry—What is it? (b) The Waverley Novels. (c) The Schoolmaster Abroad.

II. GRAMMAR.

1. Define and distinguish *quantity, accent, emphasis*. Give examples of common errors in respect of these.

2. "As I walked through the wilderness of this world, I lighted on a certain place where was a den, and laid me down in that place to sleep: and, as I slept, I dreamed a dream. I dreamed, and, behold, I saw a man clothed in rags, standing in a certain place, with his face from his own house, a book in his hand, and a great burden upon his back.

"I looked, and I saw him open the book and read therein; and, as he read, he wept, and trembled: and, not being able longer to contain, he brake out with a lamentable cry, saying, What shall I do?"

(a) Explain and give grammatical equivalents for: *lighted on—place; dreamed a dream; with his face from his own house: a book in his hand: not being able to contain.*

(b) Point out any poetical forms in the extract.

(c) Indicate the words in the extract not of Anglo-Saxon origin.

(d) Analyze the sentence, "As I walked . . . dream.

(e) *lamentable*. On which syllable is the accent?

3. Give six examples of each of the following classes of words:

(a) Nouns which have no plural terminations.

(b) Nouns which have the plural termination only.

(c) Nouns which have the plural form, but may be used in construction in the singular number.

4. Explain the importance of interjections as a part of language. Classify the English interjections, giving examples.

III.—GRAMMAR—HONOURS IN MEDICINE.

1. What relation does language bear to history?

Mention the advantages of the study of the English language.

2. Estimate the influence of the written language on pronunciation.

3. Point out the figures of speech in the following passages :

" Full many a gem of purest ray serene
The dark unfathom'd caves of ocean bear,
Full many a flower is born to blush unseen,
And waste its sweetness on the desert air."

" An upright minister asks what recommends a man ; a corrupt minister, who."

" While stands the Coliseum, Rome shall stand ;
When falls the Coliseum, Rome shall fall ;
And when Rome falls—the world ! "

IV.—GRAY'S ELEGY.

1. Characterize briefly the poetry of Gray. How was his life chiefly spent ?

2 What is the reason of the popularity of the *Elegy* ?

3. What is the problem suggested by the *Elegy*, and how is it solved ?

4. " Beneath those rugged elms, that yew-tree's shade,

Where heaves the turf in many a mould-
'ring heap
Each in his narrow cell for ever laid,
The rude forefathers of the hamlet sleep."

Why *rude* forefathers ? What is the allusion :

" Nor you, ye Proud, impute to those the fault,
If mem'ry o'er their tomb no trophies raise,
Where thro' the long drawn aisle and fretted vault
The pealing anthem swells the note of praise."

Give the etymology and meaning of *trophies*, *aisle*, *fretted*, *vault*, *anthem*.

What is the meaning of *long-drawn*, *swells* ?

5. Quote the Epitaph at the end of the *Elegy*. Is there any reason for supposing that the poet was thinking of himself in these lines ?

THE TRAVELLER.

1. Write a brief description of Oliver Goldsmith as you picture him to yourself. Name his principal writings.

2. What theory is developed in *The Traveller* ? Does Goldsmith establish it ?

3. Explain the following passages in *The Traveller* :

" The pregnant quarry teemed with human form."

" The paste-board triumph and the cavalcade."

" Where lawns extend that scorn Arcadian pride,
And brighter streams than famed Hydaspis
p^l e."

" Yes, brother, curse with me that baleful hour,
When first ambition struck at regal power."

4. " For just experience tells, in every soil,
That those who think must govern those
that toil."

Enlarge and comment upon this.

5. " And Niagara stuns with thund'ring sound."

Scan this line.

ARTS—ENGLISH—HONOURS.

1. Tell briefly what is known of the life of Shakespeare.

2. Name the other plays of Shakespeare belonging to the same class as *Coriolanus*.

What is the common source of these plays ?

3. What is the date usually assigned to the play of *Coriolanus*, and on what grounds ?

4. Name an anachronism occurring in the play.

5. By what method are the characters of *dramatis personæ* exhibited ?

Write an intelligent estimate of the characters of *Coriolanus*, *Volumnia*, and *Mene-nius*.

6. Why did Shakespeare in this play exhibit the populace in an unfavourable light ?

Is his view true to history ?

7. Quote *Coriolanus'* poetical description of Valeria in the fifth act.

8. Write full explanatory notes on the following passages :

LART. O, noble fellow !

Who, sensible, outdares his senseless sword,

And, when it bows, stands up.

Coriolanus, Act I., Scene 4.

AUF. Wert thou the Hector,

That was the whip of your bragg'd progeny

Thou should'st not 'scape me here.—

Officious, and not valiant—you have
sham'd me
In your condemn'd seconds.

Ib., Act. I., Scene 8.

BRU. In this point charge him home, that
he affects
Tyrannical power; If he evade us
there,
Enforce him with his envy to the
people;
And that the spoil, got on the Anti-
ates,
Was ne'er distributed.

Ib., Act III.

ARTS—HISTORY AND GEOGRAPHY—
HONOURS.

1. What was the extent of the royal authority at the accession of Henry VII?
Trace the changes affecting the powers of the King from Henry VII. to William III.
2. Explain and contrast the foreign policies of Elizabeth and James I.
3. Tell briefly the story of the struggle of Charles I. with Parliament.
4. Sketch the careers of Cardinal Wolsey, Archbishop Cranmer, Archbishop Laud.
5. Detail the events which led to the Revolution of 1688.
6. Mention the chief manufacturing towns of England. Describe the situation of each and the nature of its manufactures.
7. Give a complete list of the Scottish Lakes, and a general description of each.
8. Describe the physical features of Hindostan.
9. Name, and describe the situation and physical features of, the possessions and dependencies of Great Britain in Africa.

FRENCH.

ARTS AND MEDICINE—PASS.

Examiner: J. H. Long, M.A., LL.B.

Candidates in Medicine will omit Nos. 3, 4, and 9.

1. Write a paper upon the French article: its uses, forms, and peculiarities.
2. Write out in full the French for 16, 10, 23, 45, 74, 102, 500, 1254, half-past six, a quarter to eight.

3. Explain the use of *je, moi, me*: of *il, lui, le*; and of *les, leur, eux, elles*.

4. Translate into French:

"It is so at the end of all literary ages. Pliny the Younger, and Seneca, so affected and so inflated, are charming in small bits; each of their phrases, taken by itself, is a masterpiece. Each verse in Pope is a masterpiece when taken alone. At this time, and after a hundred years of culture, there is no movement, no object, no action, that poets cannot describe. Every aspect of motion was observed: a surprise, a landscape reflected in the water, a breeze amid the foliage, and so forth."

5. Translate into English:

"Dimanche, 27 Mai.—Les capitales ont cela de particulier que les jours de repos semblent le signal d'un sauve-qui-peut universel. Comme des oiseaux auxquels la liberté vient d'être rendue, les populations sortent de leurs cages de pierre et s'envolent joyeusement vers la campagne. C'est à qui trouvera une motte verdoyante pour s'asseoir, l'ombre d'un buisson pour s'abriter; on cueille les marguerites de Mai, on court dans les champs; la ville est oubliée jusqu' au soir, où l'on revient le chapeau fleuri d'une branche d'ambépine et le cœur égayé d'un doux souvenir; on reprendra le lendemain le joug du travail."

6. Give the pres. inf., the two participles, the first person of the pret. def. indic. and of the pres. indic., of all irregular verbs in above extract.

7. "Dimanche." Name in French the months and the days of the week."

8. Translate into English:

"Et pourquoi cet insatiable besoin d'enrichissement? Boit-on davantage parce qu' on boit dans un plus grand verre? D'où vient cette, horreur de tous les hommes pour la médiocrité, cette féconde mère du repos et de la liberté? Ah! C'est là surtout le mal que devraient prévenir l'éducation publique et l'éducation privée. Lui guéri, comme de trahisons évitées, que de lâchetés de moins, quelle chaîne de désordres et de crimes à jamais rompue! On donne des prix à la charité, au sacrifice; et donnez-en surtout à la

modération, car c'est la grande vertu des sociétés ! Quand elle ne crée pas les autres, elle en tient lieu."

9. Parse *c'* (c'est *li* surtout), *bien*, *guéri*, *donnez-en*.

10. Give the meaning, gender and plural of each of the following : *voix*, *fleur*, *vaisseau*, *ciel*, *miette*, *griffe*, *feu*, *peau*, *corbeau*, *loup*, *berceau*, *croix*, *bois*.

MEDICINE—HONOURS.

1. Write full notes on French accents.
2. Give the rules for the position of adjectives in French.
3. When do personal pronouns come before, and when after the verb, in French? Explain fully.
4. Translate into French :
(a) Your starting point is good : man, in fact, does not know anything of substance ; he knows neither minds nor bodies. He can attain to facts, whether within or without, only by constant repetition.
(b) You are truly French, he answered ; you leap over facts, and all at once find yourself settled in a theory. I assure you that there are thinkers amongst us, and not far from hence, at Christ Church, for instance One of them, the professor of Greek, has spoken so deeply on inspiration, the creation and final causes, that he is out of favour.

5. Translate :

" Ne le crois pas, mon fils ; la vraie gloire est le pain du cœur ; c'est elle qui nourrit le dévouement, la patience, le courage ! Le maître de tout l'a donnée comme un lien de plus entre les hommes. Vouloir être remarqué par ses frères, n'est—ce pas encore leur prouver notre estime et notre sympathie ?

6. Write five lines in English on (a), The plan and aim of the work, " Un philosophe sous les toits," (b), The old soldier (Chaufour), (c), Michel, le menuisier.

7. Translate :

La présente est pour vous dire que j'ai toujours été bien portant depuis la dernière fois, sauf que la semaine passée j'ai manqué de me noyer avec le canot, ce qui aurait été une grande perte, vu qu'il n'y a pas de meil-

leure embarcation. * * Je ne vous cache pas, chère mère, que ça m'a flaté le cœur. Mais c'est pas tout.

8. Point out and correct all bad grammar and inelegant French.

9. Distinguish between *dessous* and *dessus*, *côté* and *cut*, *fois* and *temps*, *plus* and *d'avantage*, *en* and *dans*, *pour* and *car*, (for), *mille* and *mil*, *cieux* and *ciels*.

GERMAN.

ARTS—FOR PASS; MEDICINE—PASS AND HONOURS.

Examiner: Rev. R. VonPirch.

* * Candidates in arts will take Part I., II., III., IV.; those in medicine, Parts I., IV., V.

I.—GRAMMAR.

1. Give the principal parts of the auxiliary verbs of mood, and translate : He may have said it ; you could have seen them ; I should have copied this long letter.
2. Give all the persons sin. and plur. of the present tense of any reflexive verb.
3. How are the various tenses of (a) weak, (b) strong verbs formed ?
4. Form the first pers. sing. passive voice of *rufen*.
5. Point out the difference between separable and inseparable verbs and illustrate by examples.
6. Translate : our good friend has two little sons, of whom I have seen one in a little town on the beautiful Rhine, where he with many other little children lives in the large house of this old doctor.
7. Give rules for the declension of proper names.
8. Decline *er*, *sie*, (fem.) *welcher*, giving sing. and plur.
9. Write a note on the construction of German sentences.
10. Draw up a table of the various classes of preposition.
Translate :
So ubt Stillen.
SCHILLER, *Der Gang nach dem Eisenhammer*.

1. *Er hat . . . inn.* Express the idea by another verb.
2. *Vobiscum Dominus; Paternoster.* Translate into German.
3. *Gewandtem.* Give the principal parts of the verb from which this adj. is derived.
4. *Heiter.* From its comparative and superlative degree.
5. *Was.* Which other form of the correlative pronoun might be used?
6. *Brauch.* Parse.
7. *Und eilt . . . zu* To which word does *zu* belong?
8. *Was Brauch . . . im.* Notice an irregularity in the construction.
9. *Erst reinigt er.* When does the inversion of subject and predicate take place?

III.

Translate :

Und lauter . . . Strahl.

Ib., Die Kraniche des Ibykus.

1. *Gebet Acht.* Give the corresponding form of the sing.
2. *Gerochen.* Substitute the modern past participle.
3. *Der . . . gesprochen.* What is omitted?
4. *Gerichtet war.* Notice any peculiarity or omission.
5. *Doch dem . . . bewahren.* Rewrite in prose order.
6. *Getroffen . . . Strahl.* Form a relative sentence.
7. *Bösewichter.* What termination would be more according to rule?
8. *Gern.* Give its comparative and superlative degree.
9. *Es gestehn die Bösewichter.* Parse.
10. State in what connection the following words are used: *Rhegium, Helios, Sohlen, des Todes Schweigen.*

IV.

Translate :

Sobald dieser . . . bewilligt wurden.—*Ib. Die Belagerung von Antwerpen.*

1. *Künstler* Name him.
2. *Gerncint sei.* Account for the use of the subjunctive mood.
3. Make a list of all the strong verbs oc-

curing in this extract, giving their infinite, imperfect tense, and past part.

4. Give the gen. sing. of *Kändler, Werk, Kramersinn, Gedanken*; nom. plur. of *Erfahrung, Sturm, Vorschlag, Brücke*; gender of *Tonnen, Schiffe, Gesuch, Kabeln.*

V.

Translate :

Mit diesen . . . konnte.—*Ib.*

GERMAN HONORS.

Examiner: Rev. R. VonPirch.

Translate :

STAUSSACHER.

Vor dieser Linde . . . Bose sprach.
SCHILLER, Wilhelm Tell.

1. *Tungst trutziglich, von dannen.* Substitute more modern synonyms.
2. *Der Vogt.* Give his name. Which other two men held this office.
3. *Erhub.* What imperfect form is usually employed?
Wessen ist dies Haus. Render in a different manner.
5. *Doch . . . so.* Construe according to grammatical rule.
6. *Häuser baue, Herr Wär.* Account for the use of the subjunctive mood.
7. *Unterstehen.*
 - (a) How is this verb accentuated?
 - (b) Give its past participle.
 - (c) When is *unter* separable? When inseparable?
8. *Euch.* Give its nom. and gen.
9. *Regent.* Give a German equivalent.
10. *An Kaisers Statt.* How would this read in prose?
11. Make a list of all the irregular (strong) verbs occurring in the above extract, giving their infinitive past tense and past participle.
12. Give the gen. sing. and the nom. plur. of: *Vogt, Macht, Haus, Bose, Wort, Bauer*; and the gender of *Lehen.*

II.

Translate :

(a) RUODI.

Mach hurtig, Jenni . . . eh' wir's denken. *Ib.*

1. Explain allusions in the above passage.
2. *Ich Mein'*. What rule is here violated?
3. *Hurtig, Nauc*. Supply synonyms.
4. *Her*. What would be its position in prose?

(b) RUDOLPH.

Und war's mein Bruder und mien leiblich Kind.
 Es kann nicht seyn; 's ist heut Simons und Inda,
 Da rast der See und will sein offer haben.

Ib.

1. *Leiblich Kind*. Supply the adjective termination.
2. *Es Kann*, etc. Notice a peculiarity in the construction.

3. *Der See*. Compare to *die See*.
4. *Simons and Judae*.

Give the date.

(c) ROSSELMAN.

Bei diesem Licht, der Menschen. *Ib*

1. *Licht*. Give its two plural forms and their meaning.
2. *Wir wollen* *Gefahr*. Rewrite in prose order.
3. *Eher den Tod*. Fill up the ellipsis.
4. *Fürchten*. Conjugate its present and imperfect tense and give the past participle.
5. *Höchsten*. Give its positive and superlative degree.

NATURAL SCIENCE.

H. B. SPOTTON, M.A., BARRIE, EDITOR.

UNIVERSITY OF LONDON.

MATRICULATION EXAMINATION: JUNE, 1884.

Friday, June 20.—Afternoon, 2 to 5.

CHEMISTRY.

Examiners—Prof. Dewar, M.A., F.R.S.; Prof. Thörpe, Ph.D., F.R.S.

1. Why was oxygen gas so called? What objections may be urged against the name?
2. Hydrogen is found to unite with nitrogen in the proportion of 1 to $4\frac{2}{3}$ by weight: hence since the atomic weight of hydrogen is taken as unity that of nitrogen was at one time assumed to be $4\frac{2}{3}$. Why do we to-day regard it as 14?
3. How may hydrochloric acid gas be obtained? How could you prove that it contains chlorine? What volume of chlorine is

contained in ten litres of hydrochloric acid gas?

4. How could you prepare sulphuretted hydrogen gas? What facts have served to show that its formula is H_2S ? The gas is inflammable; what substances are formed when it burns in the air? State precisely what happens when sulphuretted hydrogen is passed through aqueous solutions of the following bodies: $AgNO_3$; $SnCl_2$; Fe_2Cl_6 ; $FeSO_4$; $BaCl_2$; KNO_3 .

5. Give examples of combination between gaseous substances, and state the volume of the gaseous product in terms of the volume of the uncombined gases in each illustration. What is the meaning of the term Combining Proportion by Volume.

6. Give a general account of the physical and chemical processes which are taking place in the flame of a candle. Describe the structure and properties of flame.

SCHOOL WORK.

DAVID BOYLE, TORONTO, EDITOR

BUSY WORK.

IN answer to the question "What shall the little children do when not before the teacher?" many interesting suggestions have been made. The old direction was, "Have them sit up straight and fold their hands." These suggestions are mainly for ungraded schools, where but little time can be given to providing suitable employment.

1. Show them how to draw the outline of the hand by spreading it out upon the slate and running a pencil around it. Let them exercise their ingenuity by placing rings on the fingers, drawing the nails, etc.

2. Hang a glove up where they can see it, and let them draw that, using the hand as before for a guide. A mitten can be drawn by placing the fingers close together and both mitten and glove can be trimmed to suit their fancy.

3. Give them pressed leaves to draw in the same way, pictures of horses, dogs, cats, etc., cut out of show-bills and advertising cards.

4. Give them a pair of scissors and let them cut out pictures; let them have a little mucilage and paste their pictures in a book.

5. Write some easy words upon the board, and give them a box of letters with which to form the same words at their seats.

6. Place upon the board a few letters, carefully selected with reference to their possible combinations, and let the children build as many words as possible with them, using no other letter, but using each of them as many times as desirable. Sentences may be built in the same way by placing selected words upon the board, and letting them write all the sentences they can make with them.

[It is not in accordance with the principles taught by the prominent educators of to-day, to let small children guess at the spelling of a word. Such an exercise as

building words from disconnected letters would be better suited to older pupils. ED.]

7. Let them have small sticks to form letters and spell short words.

8. Show them how to trace pictures through tissue paper.

9. Write short sentences on the board, and require them to be copied.

10. Have the Roman letters and numbers of the pages in the reading-book copied.

11. Keep picture books, a drawing-slate, sliced animals, blocks, and a small kaleidoscope to lend.

12. Tracing slates may be used with the simple outlines of animals upon cards.

13. Shoe-pegs, coloured and white mixed, may be used in forming designs, also in little arithmetical examples.

14. Boxes of pasteboard letters, costing about twenty-five cents each, with which the children can form lists of words, sentences, fill out blanks left in sentences with words of their own choosing; see which can form the greatest number of words, etc.

15. Some of the designs used at the Kindergarten for pricking, furnish pleasant and profitable employment.

16. Upon pieces of card-board copy examples to be worked, and tables to be filled out words to be copied, or short stories containing the most difficult words in the reading lesson.

17. Have alphabets printed on stiff card-board for each one, taking care that two or more letters are supplied of those most commonly used. The children enjoy forming words and sentences with these. If your class is small, you can print them yourself.

18. Advertising cards, pasted on card-board, and cut into squares or different shaped pieces, may be used in forming pictures.

19. Get coloured bristol-board, or any stiff cardboard, and cut into squares, circles, triangles, half circles, etc. Distribute one to each pupil, and let them form figures by drawing the outlines in different positions.

20. Place a number of red, blue and yellow inch squares of bristol-board into envelopes and distributing these, have the children form designs like one on the board, or invent new ones.

21. Shoe pegs may be used in building fences, houses, etc., or wooden tooth-picks for forming designs.

22. Obtain perforated card board and needles with which the children may be taught to work simple designs.

23. For numbers, place portions of the addition or multiplication tables on the board, as $4 + 5 = 7$, $7 + 7 = 7$, or $3 \times 4 = 7$, $5 \div 5 = 7$, etc. Have the pupils provided with a small paper box of short sticks, straws or other material, and let them count out the groups, combine them, and by counting ascertain the result of each combination, recording it on the slate in proper form for recitation.—*The New York School Journal.*

NORTH HASTINGS UNIFORM PROMOTION EXAMINATIONS.

TIME TABLE.

N. B.—This Time Table must be strictly adhered to.

ENTRANCE TO JUNIOR III., AND IV. CLASSES.

THURSDAY, 12TH JUNE 1884.

Subjects.	Entrance to Jr. iii. Cl.	Entrance to Sr. iii. Cl.	Entrance to iv. Class.
	a. m.	a. m.	a. m.
Seat Pupils and read Regulations 7, 8, 9, 10, and 15....	9 - 9.15	9 - 9.15	9 - 9.15
Geography	9.15-11.15	9.15-11.15	9.15-11.15
Spelling	11.15-12	11.15-12	11.15-12
	p. m.	p. m.	p. m.
Grammar		1 - 2.30	1 - 3
Reading	2 - 2	2.30- 3.30	
Writing	2 - 3	3.30- 4	3 - 3.30

FRIDAY 13TH JUNE 1884.

	a. m.	a. m.	a. m.
Arithmetic	9 - 12	9 - 12	9 - 12
	p. m.	p. m.	p. m.
Sec. and Third Readers	1 - 2.15	1 - 2.30	1 - 2.30
Composition	2.30- 4	2.30- 4	2.30- 4
Reading		4 - 4.15	

ENTRANCE TO SENIOR THIRD CLASS.

GEOGRAPHY.

Time—2 Hours.

1. What townships of Hastings adjoin— (a) Northumberland, (b) Lennox, (c) Addington, (d) Peterboro. [10]
2. Canada contains thirteen political divisions: name them, specify those which are merely territories. [10.]
3. Define, in complete sentences,— sound, watershed, river basin, rapids, cataract, archipelago, and equator [14.]
4. How are Wardens, Sheriffs, Judges, Reeves, Governors General, Lieutenant Governors, and Magistrates appointed? Of whom is a County Council composed? [21 + 3.]
5. Sketch an outline map of N. America, locating on it the countries, (omitting those of Central America), and tracing the courses of the Mackenzie, the St. Lawrence, the Columbia, the Rio Grande, the Colorado, and the Missouri rivers. (N.B.—Mark closely for this.) [10 + 4 + 12.]
6. Trace the course of the water from Lake Nipissing to the Atlantic Ocean. [11.]
7. What and where are—Yucatan, Delaware, St. Elias, Popocatpetl, Titicaca, Blairton, Azores, Guinea, Tasmania, New Zealand, Nova Zemla, Sandwich. Answer in complete sentences. [18.]

Count 100 marks a full paper.

SPELLING.

Time—45 Minutes.

N.B.—Dictate the Punctuation Marks.

1. He, partially erect, would seize me with his proboscis.
2. My brother-in-law once had a perilous adventure.

3. I'll employ the boy wearing the parochial livery.

4. We put the agility of the little rogue to a pretty severe test.

5. Of course, the Indian's gun was levelled in an instant.

6. Planting his talons round his adversary's throat, he held him a. in a vice.

7. The princess and half the realm.

8. Exhibiting, purser, appreciate, occasionally, forty-four, broad, hundred, British Columbia, February, barley, Tuesday, parliament, rye.

9. The hair is very coarse indeed, brown towards the end, and whitish towards the base which is rather wavy, presenting an appearance as if it had passed through a miniature crimping machine.

10. The smoke encircled his head like a wreath.

11. His stomach shook, when he laughed, like a bowl full of jelly.

12. Forgetting her burthen when this she had said,

The maid superciliously tossed up her head:

When, alas for her prospects, her milk-pail descended,

And, so, all her schemes for the future were ended;

This moral I think may be safely attached.

Reckon not on your chickens before they are hatched.

For every error in Spelling take 3 off; in Capitals and Apostrophes 2 off; in Punctuation 1 off. Value 100

GRAMMAR.

Time—1½ Hours.

1. There are hearts hard enough to resist the force of wrath, the malice of persecution, and the fury of pride; but there is a power stronger than any of these and hard indeed is that heart that can resist love.

Tell the part of speech to which each of the words in italics belongs. [61 × 1.]

2. Define—sentence, adverb, preposition, composition, imperative sentence, complete subject. [18.]

3. Analyse the following, naming the kind of sentence, and the subject and predicate:—

(a) Many years ago there was a steamboat plying on one of the American rivers.

(b) One day a gentleman called upon Captain Gordon in the cabin.

(c) So ended Hannibal's first campaign in Italy.

(d) Under her torn hat glowed the wealth Of simple beauty and rustic health.

(e) What is his name?

(f) Show me your nest with the young-ones in it. [24.]

4. Write these sentences, making any corrections that appears to be necessary:—

(a) I haint got no slate. [4.]

(b) Give me them pencils. [2.]

(c) Me and John seen it. [4.]

(d) He told James and i. [2.]

(e) Old Jones has lots of money. [2.]

(f) He has just came. [2.]

(g) I catched ten fish last night. [1.]

(h) This road is awful muddy. [1.]

[4] Sarah Ann Patterson is our teacher. [1]

ARITHMETIC.

Time—3 Hours.

NOTE.—Full work required.

1. Define—denominate number, quotient, factor of a number, Roman notation, Reduction, denomination of a number. [12.]

2. Write neatly the table that is used in weighing pork, hay, etc., and the table that is used in measuring distances. [6.]

3. In 5 miles 269 rods 15 feet how many inches? [6.]

4. Change 4729334 sq. ft. to acres, rods, etc. [8.]

5. A drover bought an equal number of sheep and hogs for \$1482: he gave \$7 for a sheep, and \$6 for a hog: what number of each did he buy? [10.]

6. How many barrels of flour at \$5 a barrel should be received for 3740 lbs. of oats at 35 cents a bushel, 4260 lbs. of wheat at \$1.10 per bushel, 540 lbs. of clover seed at \$3.60 a bushel, and 510 lbs. of beef at \$10 a cwt.? [20.]

7. A man borrows \$3,500 for 3 years, paying, for the use of it, \$8 per year for every \$100 borrowed; how much will the use of the money cost him? [12.]

8. Find a number such that if the sum of 89 and 256 be subtracted from it, the remainder is 12 times 399. [10.]

9. The quotient arising from the division of 9281 by a certain number is 17, and the remainder is 373; find the divisor. [8.]

10. Find the total cost of 3 cwt. 12 lbs. 8 oz. of butter at 20 cents a lb., 12 gallons 3 qts. of vinegar at 7 cents a pint, 1020 eggs at 15 cents per dozen, 13 bushels of apples at 19 cents per peck, 4500 feet of lumber at \$10 per 1000 feet. [20.]

The Teacher will please note that *full marks* are to be given for *correct solutions only*. For answers *nearly correct* (where the method is *quite correct*) from 10 to 50 may be given. In marking, neatness of arrangement, etc., should be taken into account. Count 100 marks a full paper.

THIRD READER.

Time—1½ Hours.

1. Write the following passages, using instead of those parts in italics other words or phrases which will give the same thoughts:

(1) *Ample scope for observation.* [3.]

(2) A gentleman *was once possessed of a dog of singular fidelity and sagacity.* [4.]

(3) *Insane with wrath to be thus outwitted, the foe rushed from his covert.* [5.]

(4) *Surveyed their humble foster-parents.* [5.]

(5) *This seemed to decide her uncertainty.* [3.]

(6) *Was forming this resolution.* [1.]

(7) *The wood was scarce, owing to our proximity to the native village.* [4.]

(8) *"A school" of sperm whales.* [1.]

2. That, father, will I gladly do;

'Tis scarcely afternoon—

The minster clock has just struck two,
And yonder is the moon.

(1) Name the punctuation and other marks in the verse. [5.]

(2) Who is the speaker? Where did she live? What did she agree to do? What season was it? [8.]

3. Speak gently! He Who gave His life
To bend men's stubborn will,
When elements were in fierce strife,
Said to them, "Peace, be still!"

(1) Explain the words and phrases in italics. [8.]

(2) Who "gave His life"? [2.]

(3) What event in His life is here referred to? [5.]

(4) Give some reasons for thinking gentleness is better than severity. [9.]

4. Where and what are—Austria, Dundee, Delaware, Buffalo, Nile, Kentucky. [18.]

5. Tell briefly what you know about—Grace Darling, Casabianca, and Bruce. [9.]

6. Write from memory the last two stanzas of "Look aloft!" [10.]

COMPOSITION.

Time—1½ Hours.

N.B.—Capitals and marks of punctuation must be correctly used.

1. Name the marks which are used at the end of written or printed sentences. [6.]

2. Describe Montreal, Halifax, Picton and Ottawa. Let the description of each place be a single sentence which shall contain the following questions:—*What is it? In what County is it? On what body of water is it situated?* [24.]

3. Write the story of "Joseph being put into the Pit," observing these headings:—

(1) When was it? (2) Where was it? (3) Who was it? (4) What was it? (*Place the answer to this as the subject of the anecdote*) (5) How was it done? [25.]

4. Write statements or questions containing the following expressions:—The hideous uproar, attempt to describe, intending to run away, proximity, probability, venture, outcasts, consistence of syrup. [25.]

5. Combine the following statements into a simple sentence:—Sugar is a sweet, crystallized substance. It is obtained from the juice of the sugar-cane. The sugar-cane is a reed-like plant. It grows in most hot countries. It is supposed to be originally a native of the East.

(To be Continued.)

THE MODERN SCHOOL-TEACHER.

From the Home and School Visitor.

"Twa Saturday night, and a teacher sat
Alone her task pursuing;
She averaged this, and she averaged that,
Of all that her class was doing.
She reckoned percentage so many boys,
And so many girls all counted;
And marked all the tardy and absentees,
And to what all the absence amounted.

Names and residence wrote in full,
Over many columns and pages;
Canadian, Teutonic, African, Celt,
And averaged all their ages.
The date of admission to every one,
And cases of flagellation;
And prepared a list of graduates
For the county examination.

Her weary head sank low on her book,
And her weary heart still lower;
For some of her pupils had little brains,
And she could not furnish more.
She slept, she dreamed; it seemed she died,
And her spirit went to Hades,
And they met her there with a question' fair,
"State what the per cent. of your grade
is!"

Ages had slowly rolled away,
Leaving but partial traces,
And the teacher's spirit walked one day
In the old familiar places.
A mound of fossilized school reports
Attracted her observation,
As high as a steeple dome, and as wide
As a country school foundation.

She came to the spot where they buried her
bones,
And the ground was well built over;
But labourers digging threw a skull,
Once planted beneath the clover,
A disciple of Galen, wandering by,
Paused to look at the diggers,
And picked the skull up, look'd through
the eye,
And saw it was lined with figures.

"Just as I thought," said the young M.D.
"How easy it is to kill 'em!—
Statistics ossified every fold
Of cerebrum and cerebellum."
"It's a great curiosity, sure," said Pat,
"By the bones you can tell the creature!"
"Oh, nothing strange," said the doctor,
"that
Was a nineteenth-century teacher."

CONTEMPORARY LITERATURE.

OUTLINE OF GREEK HISTORY, by Evelyn
Abbott, M.A., LL.D., Fellow and Tutor
of Balliol College, Oxford.

OUTLINE OF ROMAN HISTORY, by P. E.
Matheson, M.A., Fellow of New College,
Oxford. Rivingtons, London, 1884.

IN these companion volumes we have the
fruits of long experience and ripe scholar-
ship. They are something more than mere
skeletons, and while not pretending to take
the place of Manuals of History, they
serve to present a complete view of history as
a whole, without which the study cannot be
of much profit. They serve the further pur-
pose of giving a connected view of the con-
stitutional history of Greece and Rome. The
chapter on this subject in Mr. Abbott's *Out-
line* is especially admirable. The genealogi-
cal and other tables scattered throughout the
books, together with a great variety of help-

ful notes, render them indispensable to the
teacher of Ancient History and Geography
in the High Schools. The Chronological
Tables in Schmitz's Manual and Smith's
Histories are excellent, but they must yield
the palm to the work of Messrs. Abbott and
Matheson.

SHAW'S NEW HISTORY OF ENGLISH LIT-
ERATURE, together with a history of Eng-
lish Literature in America, by Truman J.
Backus, LL.D. Sheldon & Co., New
York and Chicago, 1884. [pp. 490. In-
troductory price, \$1.25. Exchange price,
75c. Sample copy, 50c.]

SHAW'S *Outlines of English Literature*,
rewritten by Dr. William Smith, is too well
known to all teachers of English to need any
further commendation. It is a book that
may be depended upon for breadth of treat-
ment, acuteness of criticism, and sobriety of

judgment. The present edition is a revision of the American edition of 1874, in which the work was adapted more fully to school-room use. In its present shape it leaves nothing to be desired as a trustworthy, well-furnished, attractive hand-book of literature. Not the least valuable portion of it is the sketch of American literature carefully brought up to date. The publishers have done their part admirably to make a volume should be a welcome addition to any teacher's library.

THE ELEMENTS OF RHETORIC AND COMPOSITION, by D. J. Hill, LL.D., President of the University at Lewisburgh. New edition. Sheldon & Co., New York and Chicago, 1884. pp. 270. Introductory price, \$1.

AMONG the multiplicity of text-books on Rhetoric and Composition, there has long been room for one, that being scientific without dulness, practical without fussiness, and modern without undue technicality would satisfy the necessities of the new education. President Hill's book fills the niche, and may be looked upon as a distinct advance upon all previous efforts. It is more comprehensive than Farrar's *How to Write Clearly*, and more pointed than Bain's *Elements of Composition*. It is specially adapted to beginner in the study, and it carries him through all the work of the completed composition. It contains distinct rules for every important process of composition, and it teaches how to think and organize thought.

THE ELEMENTS OF LOGIC, by W. S. Jevons. Edited by David J. Hill, LL.D., President of the University at Lewisburgh, Pa. Sheldon & Co., New York and Chicago. pp. 330. Introduction price, \$1.

THE text-book of the late lamented Professor Jevons, of Owen's College, Manches-

ter, is, both in England and America, the popular manual on the subject of Logic. The book, as it left the hands of the author, was remarkable for the clearness and simplicity of its style, the aptness of its illustrations, its completeness and modernness of examples in reasoning. Dr. Hill has sought to bestow upon the English work the advantage of a complete and precise analysis, and to give a greater degree of prominence to cardinal principles. By typographical devices he has succeeded in distinguishing the important and unimportant parts of the text. He has also secured unity of treatment by bringing together lessons treating of the same subject. He has added some collateral helps and summaries for review.

METHODS OF TEACHING GEOGRAPHY. Notes of lessons by Lucretia Crocker, Member of the Board of Supervisors, Boston Public Schools. Second edition. School Supply Co., Boston, Mass., 1884.

To those of our readers unacquainted with this little book we heartily recommend it as a useful guide to the proper teaching of a fascinating subject. Geography well-taught is one of the most useful subjects in the whole school curriculum; badly-taught without bestowing life and colour upon the dry facts of the text-books it is simply a means of wasting time. How to make the best of the subject is the aim of the writer; and any young teacher who is enterprising enough to adopt her method and follow her plan will do himself and his school a great service. We would recommend the book especially to the notice of Principals of Model Schools. It is a fine example of the Socratic method of teaching.

AN ENGLISHMAN'S "IMPRESSIONS."—Very much of the teaching which I heard was, in a sense, too good. Everything was made so plain and so easy that there was no hard work left to the scholars. This seemed to me to be one of the weak points in the American educational methods; and on two or three occasions, when I had the opportunity of examining a class in a high school or

a normal school, I thought I recognized its evil effects. When the class was tested by questions that travelled a very little way beyond the limits of the text-book which they were studying, or the lecture to which they had listened, there was far less readiness and intellectual self-reliance than there ought to have been. If the the teachers did teach not quite so well, the result would, I believe, be better.

EDITORIAL NOTES.

WE are again compelled, from lack of space, to hold over notices of conventions, some book reviews and other interesting matter. We have to thank several friends for contributions that thus far we have been unable to use.

THE classical scholar will be grateful to Mr. Kerr for his fine Greek version of a well-known hymn. Mr. Kerr has caught with rare felicity the spirit of the original, and has clothed it in a translation of singular force and beauty. If we are not mistaken it is well adapted for music.

THERE is at last some reasonable ground for concluding that the idea of university federation is making progress in this Province. A number of representative men from the various universities, as noticed elsewhere, recently had a conference with the Minister of Education, and it is stated that sufficient progress was made in the federation plan to warrant the calling of another meeting. This is most gratifying. We can see no insuperable barrier in the way of the successful accomplishment of the scheme. The time too seems propitious. The exercise of prudence and mutual forbearance should in due time bring about the desired result.

WE hope, dear reader of the Ascham Circle, that the holiday season is bringing to you the necessary relaxation from the severe strain of the past half-year. We trust, the school-room worry, which the lay mind can never understand and appreciate, is fast dissipating under the mellowing influences of sunshine, the fields and flowers, the delights of congenial society or the companionship of nature in her varying moods in the forest or on the river or by the shore. Now is the time to lay in a store of health and spirits for the coming term, and to put so much oil into the lamp

that it will be able to put to flight all the shadows that sometimes invest the school-room. With Horace, give cares to the winds to bear to the Cretan Sea.

THE desire of those engaged in High School work, to find some means of inducing pupils to continue their studies for a definite period is perfectly natural and praiseworthy. Every term witnesses the departure from school of numbers that are in woeful need of further culture, who might if they had but the desire, remain for years in training, but who do not feel any thirst for knowledge and whose only ambition is a craving to be "brought out" or to go into society. Our girls are far too ambitious to take the place of their mothers in social concerns, and our boys who have not a professional career before them will not tarry at any prophet's bidding. Various schemes have been suggested to meet this evil. The plan proposed by Principal McHenry, Cobourg, of having a graduation course and a diploma presented with proper ceremony is worth trying. But let the goal be conspicuous and the prize worth something. We must not enter into rivalry with the ladies' schools.

THE meeting of the Ontario Provincial Teachers' Association, beginning August 12, promises to be of unusual interest. The questions proposed for discussion not only in the general association, but in the sections, are of much importance and are entrusted to men of experience and ability. In addition to local celebrities, the presence of Col. F. W. Parker, of Illinois, the apostle of the "new education," will lend some zest to the proceedings. The superannuation scheme will no doubt receive the larger share of attention, and we trust the delegates will be able to formulate such views as will conserve the interests of the profession and prove accept-

able to the public. In view of the important interests at stake, and the admitted influence of the Association in moulding public opinion, we would urge that there be a large representation of active workers from all the counties. Teachers would do well to realize the fact at once that it is to themselves they must look for support in their profession. Nowhere else is it more true that Heaven helps the men who help themselves.

MR. INSPECTOR SMITH has been relieved of his duties as Inspector of the Hamilton Public Schools, under the pretext of the necessity of having some one to give his whole time to the duties of his position. The Rev. Mr. Mockridge has been appointed in his room and stead. It is more than hinted in the public press that friends of the reverend gentlemen in urging the change have seen in the emoluments of the position, a supplement to a meagre stipend and a relief to the subscription-roll. Be this as it may, we beg leave to enter our protest against the appointment of any active member of another profession to any position requiring time and attention in connection with the schools. Worthy clergymen have generally enough to do with the spiritual concerns of their flock without undertaking a large amount of continuous secular work. He is a very rare man that undertaking dual duties would not make shipwreck of both. The reason given for the dismissal of Mr. Smith may be good, but the reason for the appointment of Mr. Mockridge in the circumstances cannot but be bad. The Hamilton Board of Education has given some signs of bewilderment of late, but we hope they will not suffer themselves to be persuaded to foolish courses. There is no folly like the folly of a school corporation.

TEMPERANCE LITERATURE FOR THE SCHOOLS.

THE widest read agitation for the adoption of the "Scott Act" is fittingly accompanied by a movement for the introduction of Temperance literature into the Public School Programme. Dr. Richardson's valuable

book is already placed in the schools of Nova Scotia and New Brunswick, and at some points in Quebec. Urgent requests were presented to the Hon. Minister of Education for Ontario, during his late educational tour, for the introduction of that or some other Temperance Manual. We heartily endorse the appeal, at least so far as the securing of a literal selection of lessons bearing on Temperance in the new series of school books, if there is not room in the programme for a separate work on the subject. Men cannot be made sober by Act of Parliament. The "Scott Act" will not stop the sale of drink, if people are determined to have it. Instruction of youth in the physiological effect of alcohol on the human system, and on the various aspects, moral, economic, and political, of the drink traffic, side by side with stringent prohibition, is the only sure method of bringing about the extermination of the dire evil which all deplore.

THE MEETING OF THE BRITISH ASSOCIATION.

THE meeting of the British Association for the Advancement of Science, to be held in Montreal, beginning August the 27th, is not only an important historical event, but a very pleasant reminder of our kinship with the men whose genius have done much to narrow the limits of the unknown as well as a graceful tribute on the part of the Association to the vigour and potential greatness of intellectual life in the Dominion. It is not too much to hope that the visit of the *savants* will supply such nutriment to our intellectual system as will enrich its blood and send it bounding through every vein. Notwithstanding the apprehension of the Association as to the experiment, when the idea of coming to Canada was first broached, it may now be taken for granted that success is already assured. At the instance of our late Governor-General, the Marquis of Lorne, who has left his mark upon the literary life of the country, the Canadian Parliament has not been slow to recognise the value of the compliment paid to Canada by the Association, and the people in their

municipal and social capacity have warmly seconded the efforts of our representatives, to place the comfort and entertainment of our visitors beyond peradventure.

We hope that many of our readers may embrace the rare opportunity of being present at some of the meetings of the Association, and of coming into contact with their professional brethren who have done much to make the name of teacher and professor honoured throughout the world. It may here be mentioned that the American Association for the advancement of science announced to meet in Philadelphia early in the season, has postponed its meeting until September 4th, in order to allow an interchange of courtesies between the two Associations. Circulars have been sent to the leading scientific societies abroad, inviting them to send delegates to the Philadelphia meeting. It is not unlikely that the Philadelphia meeting will be largely international in its character, and that an effort will be made to form an International Scientific Association. This meeting of the phalanxes of science in two cities whose every monument tells of international strife is an event that, amid the rude bickerings of political conflict and at an epoch when a murderous propagandism finds its home in the native country of one association and its victims in that of the other, is like a tender strain heard above the elemental wars. The influence of these meetings must be momentous. Upon politics it may for the present be infinitesimal. The voice of any of the Nine has but small charm for the lobbyist and the dynamitard. But upon the intellectual life of the continent, the influence will be immense, and in its blessings education will have a conspicuous share.

THE BIBLE IN THE SCHOOLS.

The question of the Bible in the public schools has been brought to the front by the address of the Hon. E. Blake, Chancellor of the University of Toronto, at its annual commencement, and by the interchange of courtesies—a new thing, by the way, and to

be recognized as a long step towards a larger union than has yet been thought of—between the Diocesan Synod of the Church of England and the General Assembly of the Presbyterian Church in Toronto the other day, during which this subject came up. Mr. Blake's proposal is that a selection shall be made by the heads of the various denominations, Protestant and Catholic, of passages of Scripture, which it shall be the duty of every public school master to have in daily use for reading and recitation by the pupils, and that the school hours shall be shortened on one or two days in the week, that the ministers of the various denominations may have the opportunity of giving religious instruction to the children of their several flocks who may be in the public school.

We regard the latter proposal as an improvement on the Regulation at present in force that such instruction if given is to be given after school hours, which is to make religious instruction a species of punishment. The present rule is a dead letter both in city and country. If changed as Mr. Blake suggests, it might be taken advantage of to some extent in the city and town schools; but it is scarcely possible that clergymen in rural districts could overtake this work. The schools are too widely scattered for it to be done to any purpose.

All good citizens should hail the former proposal with pleasure. If we are not to have the Bible itself read—as we have all along contended it should be—under Departmental regulation as a part of the work of each day, the next best thing is such a selection of passages as will teach the great spiritual doctrines and the leading moral precepts of the Holy Word. We see no reason why all should not unite on this. As we said, we prefer the Book in its entirety, but shall give our vote for even a part of it. What we desire is that the Bible should be recognized by the Department as one of the books to be read, and by the Department placed in every school, unless the trustees of any section should wish to exclude it. Failing the whole Book, let us have the selections.

EDUCATIONAL INTELLIGENCE.

TENDERS are asked for the erection of a new High School building in Brighton.

S. B. SINCLAIR has resigned the position of Mathematical Master in the Ridgetown High School.

MR. COCHRAN has been engaged as teacher of the Scientific department of the Walkerton High School.

MR. THOS. MULVEY, B.A., gold medallist, has been appointed to a fellowship in Physics in University College.

MR. S. B. SINCLAIR has tendered his resignation as Mathematical Master of the Ridgetown High School.

MR. E. R. L. GOULD, B.A., has been appointed Professor of History and Political Science at Washington University.

MR. W. H. SMITH, B.A., gold medallist of Toronto University, has been appointed Modern Language Master in Strathroy High School.

MR. CRICHTON, who has filled the position of first Assistant in Seaforth High School for the past year, has resigned his position.

MR. W. E. TILLEY, head master of the High School at Lindsay, has been appointed Inspector of Public Schools for the County of Durham.

MR. O'CONNOR, M.A., late Head-master of the Peterboro Collegiate Institute, has been appointed Head Master of the Lindsay High School.

ON the retirement of Mr. Lynn, from the Orangeville High School, the pupils presented him with a number of valuable books and an address.

MR. SYLVANUS PHILLIPS, B.A., formerly headmaster of Elora High School, has received the appointment of Principal of the Petrolia High School.

MR. DONOVAN, of Hamilton, Ont., is one of the two Inspectors of Separate Schools, and is not an Assistant Inspector, as was incorrectly stated in our last issue.

MR. J. J. RAPP, a well-known East Middlesex teacher, has resigned his position to join the ministry of the Methodist Church. He is to be stationed at Bervie.

MISS FANNIE GILLESPIE has resigned her position as second assistant teacher in the Pictou High School. Miss Gillespie will study for a first class certificate.

MR. ANGUS MCINTOSH, first-class provincial certificate, Brantford Collegiate Institute, has been appointed second-assistant master, Provincial Model School, Toronto.

MR. I. J. BIRCHARD, Mathematical Master in the Brantford Collegiate Institute, has obtained by examination the degree of Ph.D. from the University of Syracuse, U. S.

MR. JAS. MCLURRY, first-class provincial certificate and gold medallist, of the Normal School, Toronto, has been appointed third assistant master, Provincial Model School, Toronto.

A LARGE circle of friends from the neighbourhood assembled to bid farewell to Mr. J. W. Marshall, who has successfully taught in School Section No 1, Glanford, for nearly four years.

MR. GERALD ROWE, the son of the Rev. Mr Rowe, formerly of Toronto, now of London, England, has just finished his university course at Cambridge, and passed his B.A. Examination in honours.

MISS MILLS, formerly of the Hamilton Collegiate Institute, has been appointed to fill the vacancy in the Ottawa Normal School, created by the transfer of Miss Maclellan to the Toronto Normal School.

THE Free Art Classes instituted by the Education Department, Toronto, for the training of High and Public School teachers in Drawing will, after a very successful term, close on the 11th inst. Over 120 teachers have been in attendance.

THE second examination for the degree of B.C.L. of Trinity College, with the following results:—Examiners—Prof. Goldwin Smith, D.C.L., and R.G.Cox, Esq., B.A.:—Class I.: W.E.Raney. Class II.: A.C.Macdonell. Class III.: G.H.Stephenson, J.P.Eastwood.

INSPECTOR CARSON, of Strathroy, at a school picnic near Mount Brydges the other day, stated that twenty or thirty of the best teachers of West Middlesex were going to leave the profession at the end of 1884, owing to the inadequate salaries paid them.

AT a recent meeting of the Dundas Board of Education the resignation of Mr McLean, Head Master of the Public School, was accepted, and Mr.J.F.Kennedy was appointed to the position at a salary of \$600. Mr.McLean is leaving the teaching profession for journalism.

THE following were the successful candidates at the recent law examinations, Trinity: Examined for degree of B.C.L.;—first class, none; second class, W.B.Lawson, R.A. Dickson; third class, A.McA.Taylor, P.D. Cunningham, A.E.Swartout, J.M.Laby, W.A.J.Bell, J.B.Lucas, and A.W.Marquis.

WORD has been received by Dr. Jack,

President of the New Brunswick University, from the Gilchrist Trustees, to the effect that they, in consequence of the urgent representations of the Faculty of the University and that of Dalhousie College have agreed to continue the scholarships for the Maritime Provinces but only once in every three years.

MR. H. FAIRCLOUGH, B.A., silver medalist, and late fellow in Classics of Toronto University, has been appointed First Assistant in Brockville High School, and Mr. A. M. McMechan, B.A., who graduated with first-class honours in Modern Languages in the same University, becomes Second Assistant.

WE are glad to learn that Dr. Tassie, who filled so long and so successfully the position of Head Master of Galt Collegiate Institute, and who, since leaving that, has been conducting a private school in Toronto, has decided to return to the High School ranks again, and has accepted the position of Head Master of Peterborough Collegiate Institute.

MATHEMATICAL DISCOVERY.—Suppose we have a triangle whose sides are 5, 7, and 8, its area is 10 times the square root of 3 I have found another triangle whose perimeter is 20, its area rational, the sides rational and containing more space. My formula applies to any three unequal sides, as 19, 2-7, 17 1-5, and 23 19-22. I am sure teachers, inspectors and surveyors will be interested in this, which will likely be new to them, as it is to me. Exchanges copy.—*John Ireland, Dracox, Ont.*

QUEEN'S COLLEGE.—Scholarships in the Matriculation Examination, July, 1884.—General Proficiency, \$100, A. W. Beall, Whitby Collegiate Institute; Mackerras Memorial, Latin and Greek, \$100, G. J. Bryan, St. Francis College, Richmond, Quebec; Walker's General Proficiency, \$80, Charlotte A. Cameron, Boston Latin School and Kingston Collegiate Institute; Leith Memorial, Mathematics, \$57, A. H. D. Rosa, Carleton Place High School and Kingston Collegiate Institute.

THE MOSS SCHOLARSHIP.—Some time after the death of the late Chief Justice Moss it will be remembered that it was decided to found a scholarship in Toronto University in honour of his memory, he having been not only a distinguished graduate, but as Vice-Chancellor was an active member of the Senate. At the meeting of the Senate recently it was reported that \$2,075 had been subscribed. The interest on this sum amounts to about \$150 a year. The Senate is thus in a position to establish the scholarship. The movement was started by Vice-Chancellor Mulock and completed by Prof. Loudon, and to these gentlemen is due the credit of having brought it to so successful an issue.—*Mail.*

At a recent meeting of the Board of Education, Hamilton, the following resolution was carried: "It being deemed advisable that the Inspector of Public Schools should be a resident of the city, it is recommended that the services of Mr. J. H. Smith, our present Inspector, be dispensed with. In doing so, the committee desire to express their full appreciation of the valuable services rendered by him in the faithful discharge of all his duties to the board." It was also resolved and carried, that Rev. Dr. Mockridge be appointed to fill the position of Inspector of Public Schools in that city, and at the same salary as that paid the late inspector.

MR. HENRY MONTGOMERY, B.A., late Professor of Botany, Toronto School of Medicine, a gentleman well known to the readers of THE MONTHLY, has entered upon his duties as Professor and Vice-President of Dakota University at Grand Forks. At the recent meeting of the Teachers Institute at Fargo, Professor Montgomery delivered an address on success in teaching, the main points of which were: 1. A teacher must maintain good order, and the most effectual way of doing this is to keep the minds of his pupils constantly occupied. 2. He should be thoroughly familiar with whatever he attempts to teach. 3. He should, on all occasions, preserve a calm and even temper. 4. He should be thoroughly in earnest.

DURING vacation the opportunity should be taken advantage of to repair the High School buildings. A pound or two of putty might be stuffed into the nail holes of the wooden alleged battlements. A quantity of oakum should be procured and the joints of the brick walls thoroughly caulked. The caretaker should be provided with a soft brush to sweep with, as the careless use of the broom may knock a hole or holes through the floor at any point. Care should be taken in seating the children that the heaviest are placed near the walls. Such excessive pressure in the centre might fracture the joists. The teachers should be instructed not to throw waste paper on the floor, as the concussion might knock the plaster from the ceilings below. All pen handles and pencils should be chained or tied to the scholars' persons. The falling of such weighty articles is very detrimental to the stability of the building.—*Lindsay Post.*

"ANOTHER great educational success has just been scored by women," the *Pall Mall Gazette* remarks. "Mrs. Bryant, whose name is well known to London educationalists, has just taken the degree of Doctor of Science at the University of London, in the branch known as 'mental and moral science.' This includes psychology, logic and ethics, together with a number of subsidiary subjects

—namely, the physiology of the nervous system, political economy, political philosophy, and the history of ancient and modern philosophy. This is by far the most severe test of philosophical scholarship, so far as range of subject is concerned, in this country. The great difficulty of the examination is seen in the fact that, though it has now been in existence a good number of years, it has only been passed once before. The fortunate candidate on that occasion was a Hindoo gentleman. It still remains, therefore, for the enterprising metaphysical Scotchman to travel south and carry off the highest laurels which London confers on philosophical erudition.

UNIVERSITY FEDERATION.—A conference of the heads of the different universities and colleges in Ontario was held in the office of the Minister of Education, at the Education Department, recently. There were present, the Hon. G. W. Ross, Minister of Education; Principal Grant and James MacLennan, Q. C., representing Queen's College, Kingston; Dr. Wilson, of University College; Vice-Chancellor Mulock of Toronto University; Provost Body and Chancellor Allen, of Trinity College; Rev. Dr. Nelles and Rev. Dr. Burwash, of Victoria University; Rev. Dr. Castle, and Prof. Wolverton, of the Toronto Baptist College; and Rev. Father Vincent, of St. Michael's College, Rev. Dr. Caven and Rev. Dr. Sheraton, of Knox and Wycliffe Colleges respectively, were also invited to attend the Conference, but they are at present absent from the city. The gentlemen present discussed the general questions of the federation of the Colleges and Universities in Ontario. The meeting was harmonious, though no definite conclusion was arrived at, but it was considered that the progress made would justify another meeting, which will likely be held in September next. The whole tenor of the discussion was as to whether the scheme of federation was feasible.—*Globe*.

WE are sorry to see by our exchanges that so many experienced and successful teachers are quitting the profession, and that whenever the cause is stated, it is almost sure to be the inadequacy of the salary, or the prospect of doing better in some other occupation. Amongst others we have noted the following: Mr. R. A. Eadie, B.A., for the last two years Classical Master in the High School at Guelph, has just been appointed to the Principalship in the 1st Ward of Long Island City, N.Y. Mr. Michael F. Harrington, who has been principal of the separate school of Cornwall for the past two years and a half, has resigned his position and gone to Indiana, where he intends studying law. Mr. William Stahlschmidt, Principal of the Preston Public School for nearly sixteen years, has resigned his position in order to devote his whole attention to the manufacture of school furni-

ture, in which he has been engaged for some years. Mr. James Ferguson, for many years Principal of the Wingham Public School, has resigned his position, and Mr. W. E. Groves has been appointed in his place. Mr. Park has resigned his position as Principal of the Princess-street School, Chatham.

UNIVERSITY OF TORONTO.

ANNUAL EXAMINATIONS, 1884.

Degrees.

LL.D.—DOCTORS OF LAWS.

Bryce, Prof. G., Winnipeg; Murdoch, A., Port Hope.

LL.B.—BACHELORS OF LAWS.

Justin, B. F.; Lowan, A. S.; Lynch, D. J.

M.A.—MASTERS OF ARTS.

Clark, J. M., Gray, J., McCall, T. S., Passmore, S. F., Crawford, A., Lawson, A. C., Raines, F. N., Greig, W. J.

B.A.—BACHELORS OF ARTS.

Balderson, J. M., Perth; Bartlett, A. R., Windsor; Beattie, A., Hespeler; Blake, E. W. H., Toronto; Boville, T. C., Ottawa; Bowes, J. H., Toronto; Bradley, W. T., Ottawa; Broad, S. W., Little Britain; Brown, J. F., Guelph; Burt, A. W., Perth; Cane, G. F., Newmarket; Cosgrove, H. J., Seaford; Coutts, John, Valetta; Cowan, G. H., Strathroy; Cuthbert, J., Ingersoll; Davidson, H., Goderich; Drake, F. A., Detroit; Durand, C. F., Toronto; Fields, J. C., Hamilton; Frost, W. A., Owen Sound; Gable, J., Toronto; Gray, R. A., Eglinton; Haight, M., Newmarket; Hamilton, A., Motherwell; Hardy, T. N., Ottawa; Henderson, A., Oshawa; Holmes, G. W., Bunyan; Kemp, C. C., Grimsby; Leslie, R. J., Kincardine; Little, J. G., Waterdown; Little, R. A., Drumbo; Macmechan, A., Dundas; May, A. F., Ottawa; MacEchern, N., Lorneville; McGillawee, J., Shakespeare; McGillivray, J., Goderich; McKay, W. J., Toronto; McKenzie, W. P., Almonte; McQueen, D. J., Kirkwall; McWhinney, J. N., Chatham; Miles, A. C., Wycliffe College; Milligan, W. G., Toronto; Milloy, W. C., Yatton; Mulvey, T. J., Toronto; Page, J. A., Brockville; Passmore, A. D., Brantford; Potter, C., Hanover; Pratt, H. O. E., Ottawa; Robertson, N., Perth; Robinette, T. C., Toronto; Roswell, J. W., Scotland; Sale, G., Toronto; Simpson, J., Elora; Smith, W. H., Toronto; Sproule, R. K., Brantford; Stevenson, A., Peterboro'; Twohey, W. J. J., Port Colborne; Waterhouse, E. F., Ingersoll; Weir, W. C., Perth; Whetham, C., Dundee; Wigle, E. S., Kingsville; Wood, H. R., Madoc; Young, J. McG., Picton.

Medals, Scholarships and Prizes.

MEDALS.

Classics—none awarded. Physics—gold, Mulvey, T. J., Toronto; silver, Gray, R. A., Eglinton. Mathematics—gold, Fields, J. C., Hamilton; silver, Haight, M., Newmarket. Modern languages—gold, Smith, W. H., Toronto; silver, Robinette, T. C., Toronto. Natural sciences—gold, Wood, H. R., Madoc; silver, Gamble, J., Toronto. Mental science—gold, Young, J. McG., Picton; silver, Sale, G., Toronto. Prize in oriental language, 4th year, McKay, W. J., Toronto.

SCHOLARSHIPS.

THIRD YEAR.—Classics—1 Logan, W. N., Hamilton. 2 Walker, W. H., Toronto. Mathematics—1 Thompson, R. A., Granton; 2 McGeary, J. H., Bondhead. Modern languages—1 Hamilton, H. J., (double) Collingwood; 2 Holmes, J. G., (reversion). Natural sciences—none awarded. Mental science—1 Mackay, D., Embro. Blake scholarship—Hamilton, H. J., Collingwood. Lansdowne gold medal.—Hunter G.

Oriental language prize—McKenzie, D., and McGillivray, J., equal.

SECOND YEAR.—Classics scholarship—Mustard, W. P., Uxbridge, and Shiell, R., St. Catharines, equal. Mathematics—1 Martin, I. E., St. Catharines; 2 Bowerman, L. H., Bloomfield. Modern languages—Balmer, Miss E., (double). Natural sciences—McKenzie, J. J. Mental science—Duncan, J. McD. General proficiency—1 Gourlay, R., Toronto; 2 Balmer, Miss E., Toronto; 3 Chambers, G.

Lansdowne silver medal—Gourlay, R., Toronto.

Hebrew prize, Doherty, A. E.

FIRST YEAR.—Classics scholarships—1 Morrow, E. E.; 2 Sliter, E. O. Mathematics—1 Crawford, J. T.; 2 Duff, J. A. Modern languages—Logie, T. General proficiency—1 Hunter, W. H.; 2 McNamara, F. R.

Hebrew prize—Reed, H. E. A.

PRIZES.

Meteorology—Stevenson, A., Peterboro'. French prose prize—Whetham, C. German prize—Smith, W. H., Toronto. English verse—Henderson, Miss M. E., Oshawa.

English prose—McMurphy, D. J., Toronto.

Honor Lists.

FOURTH YEAR.—Classics—Class I., 1 Twohey, W. J. J., 2 Little, R. A.; Class II., 1 Holmes, Geo., 2 Miles, A. C., 3 Boville, T. C.

Physics—Class I., 1 Mulvey, T., 2 Gray,

R. A.; Class II., 1 Bartlett, A. R., and McQueen, O. G., 3 Brown, J. T.

Mathematics—Class I., 1 Fields, J. C., 2 Haight, M., 3 Cuthbert, J., 4 Little, J. G., 5 Balderson, J. M.

Oriental Languages—McKay, W. J.

English—Class I., 1 Smith, W. H., 2 Robinette, T. C., Bowes, J. H., and Macmechan, A.; Class II., 1 Burt, A. W., 2 Sproule, R. K., 3 Robertson, N., 4 McGillivray, J.

Ethnology—Class I., 1 Robinette, 2 Smith, 3 Sproule; Class II., 1 Burt, 2 Macmechan.

French—Class I., 1 Smith, 2 Burt, 3 Macmechan, 4 Robinette; Class II., 1 Sproule, 2 Robertson.

German—Class I., 1 Smith, 2 Macmechan, 3 Robinette; Class II., 1 Burt, 2 Sproule.

Italian—Class I., 1 Smith, 2 Robinette, 3 Burt; Class II., 1 Sproule, 2 Macmechan.

Chemistry—Class I., 1 McEachren, N., and Wood, H. K., 3 Gamble, J., 4 Hardie, T. M.; Class II., 1 Durand, C. F., 2 Bradley, W. I.

Biology—Class I., 1 Gamble, 2 Wood, 3 Hardie; Class II., 1 McEachren, 2 Bradley and Durand.

Mineralogy and Geology—Class I., 1 Wood, 2 Gamble; Class II., 1 Bradley, 2 Hardie, 3 McEachren, 4 Durand.

Meteorology—Class I., 1 Stevenson, A.; Class II., Brown, J. F.

Mental and Moral Science—Class I., 1 Young, J. M. G., 2 Sale, G., 3 Bowes, J. H., 4 Cowan, G. H., 5 Leslie, R. J., 6 Cosgrove, H. J., and Robinette, T. C., 8 Frost, W. A.; Class II., 1 Weir, W. C., 2 Drake, F. A., 3 Holmes, G. W., 4 Beatie, A., 5 McKenzie, W. P., and McWhinney, W. J., 7 Broad, S. W., and Davidson, H., 9 Milligan, W. G., 10 Wige, E. S., 11 Henderson, A., and Simpson, J., 13 Cane, G. F.; Whetham, C., granted an aegrotat with honours in modern languages.

Granted Pass Degrees—Milloy, C. W., Roswell, J. W.

THIRD YEAR.—Classics—Class I., 1 Logan, W. M., 2 Walker, W. H., 3 Witton, H. B., 4 Gilmour, J. L., and Hunter, G., 6 Haviland, H. J.; Class II., 1 Chisholm, W. C., 2 Mickle, G., 3 Baid, M. B., 4 Evans, J. W., and Smith, W. A., 6 Morphy, G. E., 7 Riddell, F. P.

Mathematics—1 Thompson, R. A., 2 McGeary, J. H., 3 McKay, A. C., 4 Sanderson, W.; Class II., 1 Hogaith, G., 2 Henderson, S. A., 3 Martin, S., and Weir, A., 5 Cochran.

English—1 Hamilton, H. J., 2 Sykes, F. H., 3 Brown, M. N., 4 Holmes, J. G., 5 Gardiner, E., 6 Brown, C. E., 7 Irving, W. H.; Class II., 1 Short, J., 2 Hunter, G., 3 Bain, A., 4 Blackstock, J., 5 Johnston, E.

H., 6 Thompson, A. B. Langley, M., below the line.

History—1 Hamilton, 2 Holmes and Irwin, H. E., 3 Sykes, 4 Barron, A. R., 6 Doherty, A. E., and Hunter, G., 8 Irving and Johnston, 10 Brown, C. E., and Brown, M. N.; Class II., 1 Blackstock, J., 2 Bain, A., 3 Gardiner, Preston, J. A. V., and Thompson, A. B., 6 Short, J., 7 Langley, M.

French—1 Brown, M. N., 2 Hamilton, 3 Holmes and Sykes, 5 Brown, C. E., Gardiner and Langley.; Class II., 1 Blackstock and Johnston, 3 Thompson, 4 Hunter, Irving, Bain.

German—Class I., 1 Brown, M. N., and Holmes, 3 Hamilton, 4 Gardiner; Class II., 1 Johnston, 2 Brown, C. E., and Sykes, 4 Irving, 5 Hunter, 6 Blackstock, 7 Bain and Thompson, 9 Langley.

Italian—Class I., 1 Hamilton, 2 Gardiner, 3 Holmes, 4 Brown, M. N., and Sykes, 6 Irving; Class II., 1 Brown, C. E., 2 Johnston, 3 Blackstock and Hunter, 5 Langley, 6 Bain, 7 Thompson.

Constitutional History—Class I., 1 Irwin, H. E., 2 Barron, A. R., and Hamilton, H. J.

Chemistry—Class I., 1 Shutt, F. J., 2 Creasor, J. A., 3 Kenrick, E. B., and Lennon, T. H.; Class II., 1 Walmsley, T., 2 Brent, C., 3 Dougan, R. P.

Biology—Class I., Brent and Shutt, 3 Lennon, 4 Walmsley; Class II., 1 Creasor, 2 Kenrick, Dougan below the line.

Mineralogy and Geology—Class I., 1 Brent; Class II., 1 Walmsley, 2 Kenrick, 3 Shutt, 4 Creasor, 5 Lennon, 6 Dougan.

Mental and Moral Science—Class I., 1 Collins, A., 2 Mackay, D., and Weir, A., 4 McKenzie, D., 5 Duff, I. P., 6 McLeod, A. J., 7 Webster, C. A.; Class II., 1 Barron, A. R., and Henderson, S. A., 3 Doherty, A. E., 4 Preston, J. A. V., Sisley, A. E., and Walker, W. N., 7 Elliott, J. J., Irwin, H. E., McCulloch, R. O., and Mercer, M. S., 11 Hunter, G., and Sykes, F. H., 13 Kennedy, J. R., 14 Collins, J. A., and Tolmie, J. C., 16 Phelps, S. W., 17 Adams, A. A., 18 Vickers.

Civil Polity—Class I., 1 McKay, 2 Mackenzie, 3 Weir, 4 Duff, 5 Hamilton, H. J., 6 Collins and Tolmie, Class II., 1 Preston, 2 McLeod, 3 Barron and Doherty, 5 Henderson, Irwin, and Walker, 8 Elliott, 9 Kennedy, 10 Hunter and Webster, 12 Phelps, 13 Mercer and Sykes, 15 Sisley, 16 Collins, 17 McCulloch, 18 Vickers, 19 Adams.

Oriental Languages—1 McGillivray, J., and Mackenzie, D.

SECOND YEAR.—Classics—Class I., 1 Mustard, W. P., and Shiell, R., 3 Johnson, G. W., McBrady, and Smith, A. A., 6 Ross, R.; Class II., 1 Gourlay, R., 2 Hird, W., 3 Morphy, A. G., 4 Hatton, J. P., 5 McLean, D. R., 6 McMurchy, D. J.

Mathematics—Class I., 1 Martin, I. E., 2 Bowerman, L. H., 3 Chambers, G., and Flach, W. J., 5 Gourlay, R., 6 Moore, A. H.; Class II., 1 Coates, D. H., and Fraser, C., 3 Graham, J. D., and Stephen, W., 5 Seymour, W. F., 6 McMaster, J., 7 Paterson, K. A., 8 Braithwaite, E. E., 9 Campbell, A.

English—Class I., 1 Balmer, Eliza, 2 Young, A. H., 3 Elliott, T. E., and MacPherson, F. F., and Roman, T. A., 6 Burkholder, E. E., Chamberlain, A. F., Fraser, C., Gourlay, R., Needler, G. H., Shearer, T. R.; Class II., 1 Milburn, E. C., 2 King, R.

History—Class I., 1 Young, 2 Balmer and Chamberlain, 4 Burkholder, 5 Milburn; Class II., Elliott, T. E., and Needler, 3 MacPherson and Rowan, 5 Shearer, 6 King.

French—Class I., 1 Balmer, 2 Young, 3 Chamberlain and MacPherson, 5 Needler, 6 Harvey, H.; Class II., 1 Elliott, T. E., and Cameron, G. A., 3 Milburn, 4 Burkholder, 5 Rowan, 6 Shearer, 7 King.

German—Class I., 1 Balmer, 2 Chamberlain, 3 Flach, 4 MacPherson, 5 Young, 6 Milburn. Class II., 1 Needler, 2 Burkholder, 3 Elliott, T. E., 4 Cameron, 5 King, 6 Shearer, 7 Rowan.

Chemistry—Class I., 1 Chambers, G., 2 Bell, G., 3 Roche, F. J., 4 Fife, J. A., and Mackenzie, I. J., 6 Dewar, W.; Class II., 1 Anderson, F. B., 2 Clark, C. P., and Laing, R. T.

Biology—Class I., 1 Mackenzie, 2 Dewar, 3 Chambers, 4 Bell; Class II., 1 Anderson, 2 Clark, 3 Laing, 4 Roche, 5 Fife.

Mineralogy and Geology—Class I., 1 Mackenzie, 2 Bell; Class II., 1 Anderson, 2 Clark, 3 Dewar, 4 Chambers, 5 Fife, 6 Roche, 7 Laing.

Mental Science—Class I., 1 Duncan, J. McD., 2 Simpson, N., 3 Balmer, E., 4 Cronyn, H. B., 5 Reid, H. E. A.; Class II., 1 Ross, J., and Russell, W. M., 3 Bradford, S. H., 4 McVicar, J. G., and Elliott, A., 6 Garside, R., 7 Needham, G., and Paterson, G., 9 Hamilton, A., 10 Cameron, G. A., and McKay, R. R., and Robertson, J., 13 Gourlay, R., and Youell, J. H. G., 15 Baldwin, R., and Edgar, J. Y., 17 Harvey, H., and Needler, G. H., 19 Clement, R. V., and Elliott, J., 21 Metcalf, I. J.

Logic—Class I., 1 Duncan, 2 Reid, 3 Seymour, W. F., 4 Harvey, 5 Balmer and Ross; Class II., 1 Braithwaite, E. E., 2 Simpson, 3 Russell and Youell, 5 McKay and Paterson, 7 Bradford, 8 Elliott, A., 9 Cronyn, 10 Clement, 11 Hamilton and Robertson, 12 Garside, 13 MacVicar, 14 Gourlay, 15 Cameron, G. A., 16 Metcalf, 17 Elliott, J., 18 Edgar, 19 Needham.

Hebrew—Class I., 1 Doherty, A. E., 2 Duncan, J. McD., 3 Shearer, T. R.

FIRST YEAR.—Classics—Class I., 1 Mor-

row, A. E., 2 Slier, E. O., 3 Hunter, W. H., 4 Freeman, J. A., and Stratton, A. W.; Class II., 1 Stewart, T. P. B., and White, W. T., 3 Miller, W. L., 4 Brebner, J., 5 Graham, W. A., and Tapscott, F. T., 7 Farmer, S. J. S., 8 McKay, A. N., and McNamara, F. R.

Mathematics—Class I., 1 Crawford, J. T., 2 Duff, J. A., 3 Cornwell, L. J.; Class II., 1 Philp, J. H., and Stuart, J. C., 3 Keeler, A. J., 4 Maughan, J., 5 Avery, E. H., and Dickson, J. D., 7 Rosebrugh, T. R., 8 Hunter, W. H., 9 Beath, T., Johnston, R. L., and Wright, W. V.

English—Class I., 1 Hunter, W. H., 2 Kelly, M. V., and Logie, J., 5 Fere, G. A., and Hardie, C. J., 6 Ferguson, J. A., 7 McNamara, F. R., 8 Keeler, A. J.; Class II., 1 Holden, J. B., 2 Robson, J. H., 3 Smith, A. G., 4 Osborne, W. W., and Reddon, F. A. C., 6 Garvin, J. A., 7 Armstrong, A. J., 8 Carpenter, H., 9 Graham, W. A., 10 Hume, J., and Kent, N., 12 MacLean, J. S., and Natrass, T., 14 Blaine, S. I., 15 Gardiner, A. E.

French—Class I., 1 Fere, 2 Kennedy, J. H., 3 Robson, 4 Logie, 5 Blain, 6 Ferguson and Kent, 8 McArthur, R. A., and Smith, 10 Hardie; Class II., 1 Hunter and Millar, M. B., 3 Holden, Garvin, and MacLean, 6 Hume, 7 McKay, A. N., 8 Kelly, 9 Graham, 10 McNamara.

German—Class I., Robson, Logie, Hardie; Class II., Blain and McLean, Ferguson, Kent, Fere, Miller, McArthur, Garvin, Gardner, Hume, Holden, and McNamara, Smith, Mahood, Hunter, W. W., below the line.

Hebrew—Class I., 1 Reid, H. E. A., 2 McKay, R. R.; Class II., 1 Needham, G., 2 Paterson, G.

FACULTY OF LAW.

SECOND YEAR.—Class I., Gunther, E. E.; Class III., 1 Gilmer, G. H., 2 Gray, J., 3 Moon, A. J., 4 O'Flynn, F. E., 5 Standish, W. J., 6 Collins, J. A., 7 Chisholm, W. C.

THIRD YEAR.—Class I., 1 Allan, J. A., 2 Ormiston, W. S., 3 Burgess, W.; Class II., 1 Creelman, W. F. W., 2 Watt, D. H.; Class III., Leonard, C. J.

Candidates for LL.B.—Class II., Lowan, A. S.; Class III., 1 Justin, B. F., 2 Lynch, D. J.

Scholarships—Second year, Gunther, E. F. Third year, Allan, J. A.

No medal awarded.

THE JUNE MATRICULATION—SCHOOLS OF THE SUCCESSFUL CANDIDATES.

At the June matriculation 157 candidates were successful in arts and six in medicine,

out of a total of about 200. The schools are given below, and where the candidates attended two schools he is credited to each. On this basis Upper Canada College had 14, Toronto Collegiate Institute 9, Whitby 8, St. Mary's 11, Bradford 6, Hamilton 6, Belleville 4, St. Thomas 5, London 4, Brantford 5, St. Catharines 8, Galt 7, Richmond Hill 4, St. Michael's College 5, Ottawa 3, Brantford 6, Woodstock College 7, Woodstock Collegiate Institute 2, Chatham 4, Bowmanville 2, Napanee 2, Clinton 3, Berlin 2, Welland 2, Port Perry 3, Caledonia 3, Collingwood 2, Goderich 2, Perth 3, Simcoe 2, Harriston 3, Port Hope 2, Mount Forest 2, Strathroy 2. Fourteen of the successful candidates are girls.

Aikens, B. M., U. C. Col.; Ayleen, W. W., Woodstock C. I. and Galt C. I.; Bensley, R. K., Hamilton C. I.; Bibby, F. T., Brighton H. S.; Blake, E. F., U. C. Col.; Bosely, H., Belleville H. S.; Bonge, H. F., Whitby C. I. and St. Michael's Col.; Boulbee, H. C., Toronto C. I.; Boyd, G., Trinity Col. school and U. C. Col.; Boyd, J. R. S., U. C. Col.; Broughall, Miss A. M., Bowmanville H. S.; Brown, J. G., St. Thomas C. I., Buckingham, N. P., Stratford H. S. and U. C. Col.; Burger, C. M., Napanee H. S.; Burritt, W. E., Ottawa C. I.; Campbell, J. A. H., London C. I. and private study; Campbell, C. V., Ottawa C. I.; Carrick, A., Brantford C. I.; Carveth, C. B., Port Hope H. S.; Chisholm, D. H., Port Hope H. S.; Churchill, J. W., Clinton H. S.; Coatsworth, C. S., Chatham H. S. and Galt, C. I.; Coburn, J. H., Oshawa H. S.; Colladay, Miss S., Brantford C. I.; Collins, J. H., Whitby, C. I.; Copland, J. S., Harriston H. S.; Corbett, T., St. Catharines C. I.; Crow, A. F., Welland H. S.; Downes, G. F., Vienna H. S.; Eastwood, Miss I. G., Whitby C. I.; Edgar, J. W., Hamilton C. I.; Elliott, J. N., Sarnia H. S. and Brantford C. I.; Evans, J. A., Bradford; Fennell, J. P., Berlin H. S.; Fenton, W. J., Brantford H. S.; Ferguson, D., St. Catharines C. I.; Ferguson, G., U. C. Col.; Ferguson, J. J., U. C. Col.; Fraser, H. B., Galt C. I.; Galbraith, D. E., Orangeville H. S.; Gale, J. S., St. Catharines C. I.; Garner, R. H., St. Catharines C. I. and Woodstock Col.; Gauld, W., St. Catharines C. I.; Gibson, S. G., Galt C. I.; Gibson, S. A., Toronto C. I.; Glassford, C. H., Weston H. S. and private study; Goff, H. N., Port Perry H. S.; Gordon, Miss L. M., Chatham H. S.; Grant, F. E., Richmond Hill H. S.; Grant, W. H., Caledonia H. S.; Grant, W. J., Richmond Hill H. S.; Gray, J. S., Richmond Hill H. S.; Hager, W. K., Barrie C. I.; Haines, A. E., Brantford H. S.; Hamilton, E., Woodstock

Col.; Hardy, E. A., Uxbridge H. S.; Harriston, T. M., St. Mary's C. I. and private study; Harvic, J. N., Orillia H. S.; Healy, W. J., St. Michael's Col.; Henderson, J. W., St. Mary's C. I.; Henderson, W. A., Strathroy H. S. and St. Mary's C. I.; Hewitt, Brantford C. I.; Hodges, W. H., St. Catharines C. I.; Hogarth, E. S., Goderich H. S.; Hollingshead, F. P., Bradford H. S.; Horning, Miss L., Brantford C. I.; Howell, R. G., St. Catharines C. I. and Caledonia H. S.; Hull, W. F., Caledonia H. S.; Hunter, A. F., private study; Hunter, J. H., Collingwood C. I.; Jamison, R. E., Bradford, H. S.; Jaffrey, E. C., Toronto C. I.; Johnston, Miss D. A. J., Whitby C. I.; Johnston, H. H., Belleville H. S.; Johnston, R. H., Toronto C. C.; Johnston, W., private study; Jones, Miss A., St. Catharines C. I.; Jones, G. F., Whitby C. I.; Jones, J. E., U. C. Col.; Jones, W. H., Harriston H. S.; Kenner, H. R. H., Port Perry H. S.; Kerr, C. S., St. Mary's C. I.; King, S., Whitby, C. I.; Knox, A. A., St. Mary's C. I.; Lampert, W. A., Woodstock Col.; Laughton, M., St. Mary's C. I.; Leaver, P. J., Perth C. I.; Leonard, P. J. J., Perth C. I.; Leys, W. A., U. C. Col.; Lyon, E., U. C. Col.; McArthur, Miss E. D., Port Perry H. S.; Macdonald, J., Brampton H. S.; Macdonald, J. F., U. C. Col.; Mackenzie, A. J. L., London, C. I.; MacMillan, Mount Forest H. S.; Mahony, J. M., private study; Mainland, A. W., Hamilton C. I.; Martin, S. S., Toronto C. I.; Maxfield, C. C., Woodstock C. I. and Patslam, N. Y.; McCann, W., Barrie C. I. and Wycliffe Col.; McConaghy, F., Richmond Hill H. S.; McDonald, Miss J. I., Perth C. I.; McEvoy, J. P., St. Michael's Col.; McEwen, J. A., Welland H. S.; McGowan, J., Collingwood C. I.; McLaughlin, P. T., St. Mary's C. I.; McCearry, F., Woodstock Col.; Milden, A. W., Cornwall H. S.; Miller, J. O., St. Catharines C. I. and private study; Mills, Miss M., Woodstock Col. and Ridgetown H. S.; Mitchell, R. A., Elora H. S.; Mortimer, E., U. C. Col. and private study; Nicholson, J. S., Strathroy H. S.; Ochs, Galt C. I.; Oliver, J. B., Newmarket H. S.; O'Neil, T., Belleville H. S.; Palmer, R. H., Whitby C. I.; Pearson, E. A., Napanee H. S.; Pinhey, C. H., Ottawa C. I.; Pritchard, T., Harriston H. S.; Procnunier, C. A., St. Thomas C. I.; Radcliffe, S. J., St. Mary's C. I.; Reddin, J. M., St. Michael's Col.; Robinson, G. W., Bradford H. S.; Ross, W. D. A. M., Chatham, H. S.; Rutledge, G. N., Brampton H. S.; Saunders, C. E., London C. I.; Saunders, S. J., Toronto C. I.; Senkler, E., Galt C. I.; Shaw, Miss J. S., Bowmanville H. S.; Silverthorn, G., U. C. Col.; Skey, L. F., Port Dover H. S. and London C. I.; Slater, A. E., Galt C. I.;

Sparling, J. A., St. Mary's C. I. and Strathroy H. S.; Stark, H. L., Toronto C. I.; Steen, F. J., Toronto C. I.; Stone, J. R., Hamilton C. I.; Stork, Miss J., Brampton H. S.; Strang, Miss J., Goderich H. S.; Suffel, H. F., St. Thomas C. I.; Sutherland, G., Bradford H. S.; Travers, F. J., St. Thomas C. I.; Turnbull, J. F., Clinton H. S.; Underhill, J. A., Whitby C. I.; Waldron, G., Clinton H. S.; Wallace, D. B., Simcoe H. S.; Wardell, H. A., St. Michael's Col.; Wettlaufer, F., Cobourg C. I. and Woodstock Col.; White, Miss M. M., Chatham; Wickett, W. L., St. Thomas C. I.; Wilkie, G., St. Mary's C. I.; Wills, A. E., Belleville H. S.; Wilson, G., Bradford H. S.; Wilson, W. L., Simcoe H. S.; Witton, J. G., Hamilton C. I.; Wyllie, W. A., Hamilton C. I.; Yeomans, A. D., Mount Forest H. S. and U. C. C.

MEDICINE.

Bremner, W. C. P., Barrie C. I.; Ego, A., private study; Gordon, E. P., Toronto C. I.; Hamilton, W., Uxbridge H. S.; Lackner, A. E., Berlin H. S.; McFaul, J. H., Seaforth H. S.

HONOR OF LIST.

Classics—Class I, Mainland, A. W.; Gibson, F. A.; Healey, W. J.; Macdonald, J. F.; Jones, J. E.; Sparling, J. A.; Ferguson, J. J.; Kerr, C. S.; and Suffel, H. T., equal. Class II, Collins, J. N., and Leys, W. A., equal; Carveth, C. B.; Blake, E. F.; Reddin, J. M., and Wilson, W. L., equal; McGowan, J.; Crow, A. F.; Kenner, H. R. H., and Oliver, J. B., equal; King, S., and Lampert, W. A., equal; Hamilton, E., Henderson, W. A., and Wickett, W. J., equal; Brown, J. G.; Grant, W. H., and Johnston, W., equal; Campbell, C. V.; Fenton, W. J.; Ferguson, D., and Hunter, J. H., equal.

Latin only—Class I., Steen, F. J.

Mathematics—Class I., Witton, J. G.; McGowan, J.; McDonald, J. J.; Carveth, C. B.; MacMillan, J. W., Class II., Steen, F. J.; Glassford, C. H.; Boulton, H. C.; Hogarth, S. S.; Gibson, T. A.; Sparling, J. A.; Saunders, S. J.; Gale, J. S.

English—Class I., Gibson, T. A., and McLeay, F., equal; Eastwood, I. J., and Blake, E. F., equal; Miller, J. O.; Macdonald, J. F.; Hogarth, E. S., and McDonald, J. I., equal; Collins, J. H.; Gauld, W.; Gale, J. S.; Hardy, E. A.; Hodges, W. H.; Jeffrey, E. C.; Jones, J. E.; Saunders, S. J.; Sparling, J. A.; Underhill, J. A.; Waldron, G., and Wettlaufer, F., equal. Class II., Healey, W. J., and McLaughlin, P. T., equal; Copland, J. S.; Hunter, J. H.; Ocks, A., and Suffel, H. F., equal; Brown, J. G.; Kerr, C. C.; Steen, F. J., and Stork, J.,

equal. Binsley, R. R., and Hager, W. K., equal; Johnston, D. A. J., and Jones, A., equal; Palmer, R. H.; Colladay, S.; Knox, A. A., and Wilson, G., equal; Crow, A. F.; Martin, S. S., and Wickett, W. L., equal; Boulthbee, H. C.; Buckingham, N. P.; Edgar, J. W., and Saunders, C. E., equal; Jones, G. F.; Lampori, W. A., and Slater, A. E., equal; Radcliff, S. J., and Wilkie, G., equal; Henderson, J. W.; Horning, L.; Fenton, W. J.; Broughall, A. M.; Gordon, L. M.; Jones, W. H.; Leys, W. A.; Lyon, E.; Macdonald, J. A.; Pinney, C. A.; Robinson, G. W.; Shaw, J. S., Skey, L. E., and Yeomans, A. D., equal.

History and Geography—Class I., Mahony, J. N.; Steen, F. J.; Sparling, J. A.; McLeay, F.; Saunders, S. J.; Ochs, A.; Gibson, T. A.; Glassford, C. H.; Hager, W. K.; Jeffrey, E. C.; Jones, J. E., and Kerr, C. S., equal. Class II., Miller, J. O.; McDonald, J. I., and McLaughlin, P. F., equal; Collins, J. H., and Radcliffe, S. J., equal; Gale, J. S.; Hunter, J. H., and Knox, A. A., equal; Jones, A.; Palmer, R. H., and Underhill, J. A., equal; Martin, S. S., and Wilson, G., equal; Carveth, C. V.; Jones, G. F., and MacMillan, J. W., equal; Hodges, W. H.; Gordon, L. N.; Jones, W. H.; Lees, W. A., and Slater, A. E., equal; Edgar, J. W.; Waldron, G.; Wilkie, G., and Yeomans, A. D., equal; Brown, J. G.; Hardy, E. A.; King, S., and Stork, J., equal; Campbell, C. V.; Blake, E. F., and Johnson, D. A., equal; Binsley, R. R.; Ferguson, G.; Grant, W. H., and Henderson, J. W., equal.

French—Class I., McLeay, E.; Steen, F. J.; Horning, L.; Buckingham, N. P., and Colladay, S., equal; Eastwood, J. G.; Binsley, R. R.; Hunter, J. H.; Jones, J. E., and McDonald, J. I., equal; Gale, J. S.; Hodges, W. H., and McCarthy, E. D., equal; Carveth, C. B., and Hardy, E. A., equal; Jeffrey, E. C.; Jones, A.; Macdonald, J. F., and Stork, J., equal; Blake, E. F., and Gibson, T. A., equal; Collins, J. H., and Wilson, G., equal; Campbell, C. V.; Hogarth, E. S.; King, S., and Martin, S. S., equal; Leys, W. A.; Robinson, G. W., and Wettlaufer, E., equal; Johnston, D. A. J.; Shaw, J. S., and Yeomans, A. D., equal; Mitchell, R. A.; Broughall, A. M.; Gordon, L. N.; Jones, W. H., and White, M. M., equal; Strang, J.; Pinhey, C. H.

German—Class I., Wettlaufer, F.; Steen, F. J.; McLeay, F.; Fennell, J. P.; Colladay, S.; Horning, L.; Blake, E. F.; Ochs, A., and Jones, A., equal; Robinson, G. W.; Hardy, E. A.; Jeffrey, E. C., and McDonald, J. I., equal; Martin, S. S.; Hodges, W. H.; Gale, J. S.; Gordon, L. N., and Yeomans, A. D., equal; Hunter, J. H.; Jones,

J. E.; King, S.; Eastwood, J. G.; Stork, J.; Class II., Wilson, G.; White, M. M.; Hogarth, E. S.; Strang, J.; Johnston, D. A. J.; Mitchell, R. A.; Shaw, J. S.; Binsley, R. R.; Broughall, A. M.; Pinhey, C. H.; Campbell, C. V.

Medicine.

PASSED LIST.

Bremner, W. C. P.; Ego, A.; Gordon, E. P.; Hamilton, W.; Lackner, A. E.; McFaul, J. H.

HONOR LIST

Classics—Class I., Bremner, W. C. P.; Class II., Ego, A.

English—Class I., Gordon, E. P.; Class II., Hamilton, W.; Bremner.

History and Geography—Class I., Gordon; Class II., Bremner; Hamilton

French—Class I., Bremner; Gordon; Class II., Lackner; Hamilton.

German—Class I., Bremner; Class II., Hamilton; Lackner; McFaul.

Chemistry—Class I., Ego; Lackner.

Ladies' Local Examinations.

PASSED LIST.

The number affixed to the names indicates the group in which the ladies have passed, group 2 comprising mathematics, and group 3 English, History and Geography, and French. German may be substituted for French.

BRANTFORD YOUNG LADIES' COLLEGE—Allen, E. (3); Barr, F. (3); Gordon, B. (3); Mayhood, G. (3); Somerville, M. (3); Wilson, M. (3)

INGERSOLL HIGH SCHOOL.—Ashcroft, A. (2). (3); Austin, M. (2); Beamer, K. (2); Bradbury, E. (2). (3); Cameron, E. (3); Crawford, J. (3); Connolly, M. (2); Dufferin, M. (2); Dufferin, J. (2) (3); Hislop, M. (2), (3); Johnston, B. (2); Ker, L. (2); Mason, M. (2), (3); Rose, I. (2), (3); Waller, C. (2); Mines, E. (3)

PICKERING COLLEGE—Anderson, C. (3). Brown, A. M. (3); Doyle, H. (3); Margash, E. F. (2). (3); Wright, G. (3)

RICHMOND HILL HIGH SCHOOL.—Falconbridge, M. (3); Rutherford, E. (3); Stump, J. (3); Welis, I. (3).

STRATFORD HIGH SCHOOL.—Abraham, A. R. (3); Anderson, J. E. (3); Anderson, M. (2). (3); Bax, M. (2); Butt, B. I. (3); Causton, H. (3); Chippa, M. I. (3); Crossen, S. (2) (3); Donaldson, J. (3); Eby, E. B. (2). (3); Hammill, M. (2). (3); Hay, M. M. (2). (3); Irwin, Hannan (3); Irwin, Harriet (2). (3); Johnston, J. (2). (3); Johnston, K. (2). (3); Keay, H. (2). (3); Laing, C. (3); Love, M. (2). (3); Macklin, C. M. (2). (3);

Marshall, J. (2), (3); Murphy, J. A. (2), (3); Nisbet, J. (2), (3); Patterson, F. (3); Patterson, M. M. (2), (3); Reid, I. J. (2), (3); Stevenson, E. (1); Tretheway, L. (2), (3); Wells, C. M. (2), (3).

ST. THOMAS COLLEGIATE INSTITUTE.—Allworth, A. (2), (4); Bale, L. (3); Crawford, A. (2), (3); Crawford, B. (1); Drake, R. (3); Glen, N. (2), (3); Hunsberger, B. (3); Hagerly, L. (3); Irving, E. (2); McAlpine, A. (3); McIntyre, M. A. (2), (3); McRae, L. (3); Midgley, L. (2), (3); Mulholland, I. (3); Munro, I. (3); Nash, S. (2), (3); Nixon, M. (3); Percy, M. (2), (3); Purlee, E. (2); Webb, M. A. (2), (1).

TORONTO COLLEGIATE INSTITUTE.—Baxter, A. (3); Buchan, S. (3); Bryan, C. L. (3); Green, M. C. (3); Hay, May M. (3); Johnston, M. M. (3).

BERLIN HIGH SCHOOL.—Goetze, C. M. (2), (1).

GALT COLLEGIATE INSTITUTE.—Kellehar, M. (3).

HONOR LIST

English—Class I., Johnston, M. M.; Hay, M.; Somerville, M.; Patterson, M. M. Class II., Burt, B. L.; Baxter, A.; Bryan, C. L., and Irwin, Harriet; Buchan, E.; Green, M. C.; Mahood, G.; Macklin, C. M.; Johnston, K.

History and Geography—Class I., Somerville, M.; Baxter, A. Class II., Johnston, M. M.; Green, M. C.; Hay, M., and Mahood, G.; Nisbet, J.; Anderson, J. E., and

Burt, B. L.; Gordon, B., and Hammill, N.; Buchan, E.; Crossen, S.; Bryan, C. L., and Hay, M. M., equal.

French—Class I., Somerville, M.; Johnston, M. M.; Falconbridge, M.; Patterson, M. M.; Baxter, A.; Macklin, C. M.; Goetze, C. M.; Bryan, C. L.; Burt, B. L., and Hay, M.; Crossen, S., and Irwin, Hannah; Gordon, B., and Green, M. C.; Brown, A. M., and Irwin, Harriet; Wright, G.; Kellehar, M., and Stevenson, E.; Hay, M. M.; Tretheway, L. C.; Allen, E.; Marshall, J. Class II., Barr, F.; Buchan, E. German—Class I., Goetze, C. M.; Johnston, M. M.; Eby, E. K. Class II., Hammill, N.

The following are the names of the winners of scholarships in Arts with the institutions from which they came:—

Mary Mulock, Classical scholarship; Mainland, A. W., Hamilton Collegiate Institute Mathematics—Whitton, J. J., Hamilton Collegiate Institute.

Modern Languages—McLeay, F., Woodstock College

General Proficiency—(1) Gibson, T. A., Toronto C. I.; (2) Steen, F. J., Toronto C. I.; (3) Carveth, G. B., Port Hope H. S.; (4) Sparling, J. A., St. Mary's C. I., and Strathroy H. S.

Prince of Wales' scholarship—Jones, J. E., Upper Canada College.

No scholarships were awarded in medicine, no candidate having attained the necessary 66 per cent on the total, which entitles to first-class standing.—*Mail and World Report.*

EDITOR'S TABLE.

IN *Littell's Living Age* for July 26th there is a valuable paper on "Sophocles," by Prof. S. H. Butcher.

MR. G. M. ADAM'S masterly analysis and review in *The Week* of Mr. Drummond's "Natural Law in the Spiritual World" (Williamson & Co., Toron'o), has, within a few weeks cleared off several large consignments of this remarkable book.

THE August *Lippincott* contains the first chapter of a new story, "A Week in Killarney," and the first instalment of Mr. Coleman's "Personal Reminiscences of Charles Reade." The paper on "Female Suffrage," is pointed and cogent.

St. Nicholas for August is a seasonable midsummer number. Young people will be delighted with Louisa M. Alcott's "Spin-

ning-wheel" story, and the instalment of "Historic Boys." There is always something in *St. Nicholas* that the older folk would be the better for reading.

As we go to press, The Canada Publishing Co., Toronto, send us a copy of their edition of "The Lady of the Lake" and "Rip Van Winkle," by T. C. L. Armstrong, M. A., LL. B., and of "The Map of Ontario," by Mr. S. Hughes. Messrs. Copp, Clark & Co., Toronto, also send us their edition of "Rip Van Winkle," by W. R. Bigg, M. A.

THE Report of Mr. Inspector Mackintosh to the County Council on the condition of the schools in North Hastings, is a very interesting and valuable document. It has been prepared with much care, and touches upon many topics of prime importance to the profession and to the general public. We

hope to be able to give some extracts from it in our next issue.

Messrs. Macmillan & Co., London and New York, have issued a new and revised edition of their valuable Educational Catalogue, forming a volume of over 100 pages, 12 mo., embodying, beside their own comprehensive list, the well-known "Clarendon Press Series" and "Pitt Press Series," of Oxford and Cambridge Universities. All teachers and students will naturally desire to see this catalogue of standard works by some of the ablest writers of the educational world.

THE Report of the Commissioner of Education for the year 1881, issued from the Government Printing House, Washington, is a mine of information concerning the schools of the United States. In this closely printed octavo of 840 pages there is a full and concise account of the educational machinery, with a summary of results. It is a complete *corpus* of educational facts, and is in every way creditable to Mr. Commissioner Eaton and the United States Government.

WE have also to acknowledge the receipt from Mr. Commissioner Eaton, circulars of information of the Bureau of Education. No. 2, 1884, "The Teaching, Practice, and Literature of Shorthand," by Julius Ensign Rockwell, stenographer; and No. 3, 1884, "Illiteracy in the United States in 1870 and 1880," with diagram and observations, by Chas. Warren, M.D., with an appendix on "National Aid to Education," by J. L. M. Curry, LL.D., general agent of the Peabody Education Fund.

THAT sterling publication, *The Critic and Good Literature*, (the *Good Literature* Publishing Co., New York), as may be seen from the index to vol. I (new series), January to June, 1884, contains a large amount of literature and literary information of value to the reading teacher. We say once more to all our readers, if you are not acquainted with the *Critic*, do not delay in seeking an introduction to it. You will find the quality excellent.

FASCICULUS No. 2., vol. II., July, 1884. *Proceedings of the Canadian Institute* contains the papers by Prof. George P. Young, University College, Toronto, that have attracted the marked attention, as noticed in THE MONTHLY, of the mathematical world: "Principles of the Solution of Equation of the Higher Degrees," and "Resolution of Solvable Equation of the Fifth Degree," and also "The Real Correspondence of Imaginary Points." Among other papers of interest to the learned may be mentioned Principal Buchan's "Flora Hamiltonensis;" Prof. Campbell's "The Khitan Languages," and Dr. McNish's "Gaelic Topography of

Wales and the Isle of Man," the latter of very special interest to students of history and geography.

THE *Atlantic Monthly* (Houghton, Mifflin, & Co., Boston), is always delightful reading, but is especially grateful in the holidays. The critical reader is always sure of finding in it some subtle analysis of character, some gem of poetry, some masterly book review. "Choy Susan" in the July Number, and "Dinky" are rare bits of magazine reading. The mere mention of "In War time," by Mitchell, "The Twilight of Greek and Roman Sculpture," "A Cook's Tourist in Spain," "The Edia Among the Algonquin Indians," by Chas. G. Leland, and "The Anatomizing of Shakespeare," by Richard Grant White, ought to attract the attention of the general reader to this excellent number.

THE August *Eclect* (E. R. Felton, New York), has the usual appetising bill of fare for the cultivated reader. Nineteen papers from the best of the Foreign Magazines, together with "Literary Notices," "Foreign Notes" and the "Miscellany" form sufficient literary pabulum for a whole week. One cannot read everything that comes in his way, and holiday-time ought to be devoted to laying in a store of health for the next term, but we must find leisure for reading now "Le Style C'est l'Homme," from the *Fortnightly*; "Some Remarkable Love Letters," from the *Pall Mall Gazette*; "An English Princess," from *Merry England*; and Kingsley's "Juventus Mundi," from *Macmillan*.

THE *Popular Science Monthly* (D. Appleton & Co., New York) contains no less than thirteen articles besides "The Editor's Table," "The Literary Notices," "The Popular Miscellany and Notes." Of special professional value is Professor Woodward's "The Fruits of Manual Training." He holds that the fruits of manual training when combined, as it always should be, with generous mental and moral training are: (1) Larger classes of boys in the Grammar and High Schools; (2) Better intellectual development; (3) A more wholesome moral education; (4) Sounder judgments of men and things and of living issues; (5) Better choice of occupations; (6) A higher degree of material success, individual and social; (7) The elevations of many of the occupations from the realm of brute, unintelligent labour to one requiring and rewarding cultivation and skill; (8) The solution of "labour" problems. We commend to the notice of all students of Botany, the paper on the "Diseases of Plants," by Prof. Penhallow, of McGill University.