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The Canada School Journal.

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CANADA SCHOOL JOURNAL HAS RECEIVED

An Honorable Mention at Paris Exhibition, 1878.
Recommended by the Minister of Education for Ontario.
Recommended by the Council of Public Instruction, Quebec.
Recommended by Chief Superintendent of Education, New Brunswick.
Recommended by Chief Superintendent of Education, Nova Scotia.
Recommended by Chief Superintendent of Education, British Columbia.
Recommended by Chief Superintendent of Education, Manitoba.

The Publishers frequently receive letters from their friends complaining of the non-receipt of the JOURNAL. In explanation they would state, as subscriptions are necessarily payable in advance, the mailing clerks have instructions to discontinue the paper when a subscription expires. The clerks are, of course, unable to make any distinction in a list containing names from all parts of the United States and Canada.

THE QUALIFICATION OF HIGH SCHOOL MASTERS

A few years ago the sole qualification required of a candidate for the head mastership of a grammar school was the possession of a degree from some British or Canadian University. In those days any undergraduate of such a university was legally qualified to become an assistant master in a grammar school. Of late years something has been done by the Education Department in the way of prescribing a certain amount of preliminary experience of a professional kind as a condition of being allowed to teach in a high school, and in the recently published regulations a further step has been taken in the same direction. These require that in order to become a head master a candidate must not only have graduated in some university in Her Majesty's dominions, but must also be able to show either that he has taught successfully for two years as an assistant or that he is in possession of a first class public school teacher's professional certificate. In order to qualify as an assistant master a candidate must now be (1) the holder of a first class public school teacher's certificate, or (2) a graduate with a first class professional certificate, or (3) a fourth year undergraduate with the latter certificate, or (4) the holder of a special certificate which will be valid only for the school in respect of which it may be granted. To put the matter briefly, each high school teacher must first have been a public school teacher or must have attended one of the Normal Schools.

While opinions may vary as to the precise test of professional qualification that is most expedient there can hardly be two opinions as to the necessity of requiring high school masters to know something about the art of teaching before they are allowed to take charge of either a class or a school. It is not easy to understand why professional experience was not sooner required of candidates for high school positions when the tests for public school certificates were each year becoming more and more stringent. Surely high school work is at least as important as public school work, apart altogether from the consideration that most of our public school teachers now get their non-professional training in high schools. While attending these institutions young teachers in training are unconsciously forming themselves on the teaching models presented for their imitation, and if the head master or his assistant is inexperienced or unskilful how can the result be anything but injurious to the intending teacher who comes into daily contact with them?

There are some, no doubt, who will argue against the enforcement of the above requirement on the ground that no graduate of a university should be subjected to the humiliation of having to pass a session at a Normal School. But it should be borne in mind that none of our colleges as yet possess chairs of pedagogy, and that there is therefore no humiliation in an intending high school teacher getting his professional training at the only institutions where such a training can be procured. It is a choice between getting it there and being allowed to acquire the necessary skill by dint of dearly purchased experience—dearly purchased so far at least as the pupils are concerned.

Others will say that it is not a good thing to prevent undergraduates, who are compelled to earn money to pay their college expenses, from teaching as assistants in order to obtain the means of completing their own education. The obvious reply is that such students should not be placed in a position to educate themselves at the expense of boys and girls whose time is just as precious as their own. The country can better dispense with one of its many graduates than it can afford to see the youth of any locality losing precious time at school.

The only question in reality is whether, other things being equal, a teacher with a professional training is better than one without it. If there is a second question it is whether such a requirement is not likely to so diminish the supply of teachers as to greatly increase the cost of maintaining high schools. Of that there is now no fear. The supply will always be equal to the demand, provided that teachers now qualified are allowed to remain so, in accordance with the usual practice of the Department. The interests of the impecunious student should have no place in the consideration of the question. If he is very anxious to finish his college course and is made of the right stuff he will find a way of getting to the end of it and will be all the better for the struggle. In any case the interests of hundreds of young people of both sexes cannot be made subservient to his in a matter of such vital importance. We are assuming, of course, that a man will be all the better a teacher, whatever his scholarship or natural aptitude may be, for having had a professional training—an assumption so reasonable that no one is likely to call it in question. It is now deemed necessary to have a professional training for divinity, law, medi-

cine, and dentistry, callings in which practical skill is the great *desideratum*, and surely it is not asking too much to require those who are about to undertake the most difficult of all callings —that of a teacher—to have some professional outfit.

THE NORMAL SCHOOLS.

The Ontario normal schools are elevated by the new Departmental regulations into a position of greater responsibility than that which they have heretofore occupied. Henceforth they are to become the professional training-schools for high as well as public school teachers, and to be made more distinctively than ever before pedagogic institutions. It is obvious that if there is to be a profession of teachers the entrance to it must be through some professional training, and that training can best be acquired in this Province at one or other of the provincial normal schools.

The change in the status, and to some extent in the functions of these schools, rendered it absolutely necessary that the system pursued in them should be uniform. Teachers trained in one of the institutions should, in a general way at least, have the same professional views and be ready to pursue the same practical methods as those trained in the other. To secure this it was necessary to place them under individual control, and for the post of "Director" the Government have wisely selected Dr. McLellan. His previous career has been well calculated to fit him for the new duties entrusted to him. He was for many years a successful teacher in different parts of Ontario and in Nova Scotia. For more than ten years he has filled with equal success the difficult position of inspector of high schools. During that time he has been assiduous in his efforts to inculcate more intelligent methods by addressing teachers' institutes, and many a young teacher has been in this way helped over difficulties and inspired with enthusiasm for his work. The appointment is a most fitting one and we have no doubt that events will prove it so and justify the Minister's choice.

We are not amongst those who believe that little or no good work has been done in the normal schools in the past. On the contrary we know that in an unostentatious way they have been accomplishing a great deal—how much it is difficult to accurately estimate. But under the new arrangements still better results may fairly be expected and for these all educationists will earnestly look.

THE EFFECTS OF A CASTIGATION.

In language less objectionable than that of last month, and with a manner which may very properly be described as subdued, the *Educational Monthly* replies to our remarks on its recent coarse and malicious attack on the Minister of Education. We have no desire to repeat the castigation especially as the one already administered has had so salutary an effect. We are disposed rather to call attention to some of the admissions made while our contemporary was still suffering under a keen sense of well-deserved punishment. The following reads very much like an apology to Mr. Crooks, dictated by unfeeling and hard-headed proprietors, with business interests to subserve, to an editor who would like to repeat the language of last month or even out-do it :—

We have had no thought of upsetting the Government of the Province, of conducting any crusade against it, or of importing into our educational affairs any political feeling, or of writing against its head with partisan acerbity.

Of course there was acerbity in the language applied, but it was not "partisan" acerbity. It was absolutely necessary in the interest of education to describe the Minister of Education as "anomalously compounded of capriciousness and political partisanship;" as "dominated by his official importance" and having his "volition controlled by political bias or professional intrigue;" and as characterized by a "wordy flatulence" which is "only equalled by his pretentious ignorance." All this and a good deal more was said about the Minister without even a tincture of "partisan acerbity." The readers of the *Monthly* will be glad to learn that all political "influences" and "prejudices" are kept at "a long arm's length from education and educational affairs" in that sanctum. Long may it be so.

The *Monthly* feels aggrieved at any reflections on its language, as if they were attempts to curtail its liberty of criticism. We would be the very last to seek to deprive any one of his freedom in this respect, but it is the misfortune of some people that they can never learn to distinguish between civility and subserviency, and that they feel it necessary to use coarse language in order to be forcible. While we have often differed from the policy of the Minister we have never found it necessary to abuse him in language which would be out of place in the mouth of a magistrate addressing a pickpocket.

TEXT-BOOKS AND OTHER SCHOOL-BOOKS.

The following extract from an article in a paper published in the western part of this Province furnishes an excellent specimen of the loose talk so extensively indulged in with respect to school books :—

"'Marmion' with notes is to-day absolutely worthless in the market. Ten days ago they were going off like very hot cakes at a dollar apiece. Fifty cents each would be a very good price for them, if there was no mismanagement about the business. We hope Mr. Crooks will give his best personal attention to this whole book question without delay. Steps should be taken to secure some permanence in text-books and to have them supplied at one half present prices. The idea, too, of allowing the irresponsible authorities of Toronto University to decide what text-books the thousands of high school pupils are to use, seeing that only one or two per cent of them ever enter that University, is simply preposterous."

It is clear that the writer of this paragraph has made no effort to understand the question he undertakes to discuss. If English texts are to be studied at all there can surely be no objection to allowing publishers at their own risk to get out annotated editions of them. In many schools there are no reference libraries, and an edition of the prescribed text with full explanatory notes is to teachers and pupils so unfortunately situated a real boon. They are under no compulsion to buy such an edition. The text of "Marmion," without any notes, could be furnished for a mere trifle, but how many would pay ten cents for it when they could buy a well annotated edition

of it for ninety? Who has any right to find fault either with the publishers for providing such editions, or with the teachers and pupils for purchasing them? If they were compelled, by want of enterprise on the part of the publishers, to use unedited texts there would soon be an outcry of another kind. To ask the Minister of Education to interfere with the price of books not specially authorized by himself is as sensible as would be a request from the readers of the paper we quoted from, to Mr. Crooks to fix its subscription price. The publishers of edited texts know better than any one else what it costs to get them up, and when there are several rivals in the field the public may rest assured that the publishers will not make a gigantic fortune out of a work that has so limited a circulation.

The remarks about the University authorities are equally absurd. The work of preparing candidates for entrance into the University is carried on chiefly in the high schools, though the great majority of the pupils in these schools have no intention of going to college. But those who are preparing for the university examinations, as well as those who are not, study English, and the most obtuse can understand that it is better for the schools to have the pupils all reading the same work in English than to have them divided up into two or more classes. The Department wisely adapts its programme in English to that of the University, and it does this in the interest of the schools, not of the University. If it is preposterous thus to make the work in English in the high schools uniform then by all means get as much variety as possible introduced into the programme in order to provide employment for the teachers, who are, of course, hard set to keep themselves busy as it is.

—Some rigorous remarks on the necessity of paying more attention to English in England were recently made in a public address by Prof. J. F. Hodgetts, late of Moscow. After describing the Russian Educational system and calling attention to the importance attached to the study of German in Germany and of Russian in Russia be added:—"There are not above a dozen scholars in England who know English as every German student of philology knows German, and every Russian student, all round, knows Russian. Now, considering that our old English is the finest, the most copious, the strongest, and most musical of any language in Europe, while our literature is the richest, the most complete, and most instructive of any literature of either ancient or modern date, I think it time to make a strong appeal to the powers that be, urging the necessity of a study of English in England, as a chief subject for honours." At no distant day it will be a source of amazement that in the Provincial University of Ontario no English work older than Chaucer has ever been prescribed as a subject of study. It is the thing to be familiar with archaic Greek, Latin, German, and French, but few become familiar with the language of Spenser, and fewer still with that of Chaucer, while not a candidate is expected to be able to read the "Vision of Piers Ploughman," to say nothing of still older English and purely Anglo-Saxon writings. Those in this country who cultivate any acquaintance with these old works must do it, not as a matter of college reading, but during the pauses of busy professional life.

S. P. DAVIS, M.A.

As we go to press intelligence reaches us of the sudden death of S. P. Davis, M.A., who has for some time past filled the position of Principal of Pickering College. His loss will be keenly felt by a large and rapidly widening circle of friends, for to become acquainted with Mr. Davis was to admire and love him. After a successful course in Toronto University he graduated with distinction in that institution in 1875. During his attendance at University College he was more than usually popular with his fellow students on account of his geniality and unassuming worth. He selected teaching as his vocation and was well calculated to shine in his profession. Naturally an enthusiast, he threw himself into his work with the whole-souled earnestness that characterized all his undertakings. His connection with Pickering College commenced when he became assistant to J. E. Bryant, M.A., and when the latter accepted the principalship of the Galt collegiate institute Mr. Davis became his successor. Seldom, indeed, is it the lot of the journalist to record a more melancholy case of a life of promise cut short by an untimely death.

Geographical Notes.

CIVIC CORPORATIONS IN ONTARIO.

The following list of cities, towns, and incorporated villages in this Province has been compiled from the census of 1881 by Mr. W. S. Howell, of Thornyhurst. All villages with a population of less than 1000 have been omitted except the two that, in spite of their want of extent, are county towns. It is possible that the census may be misleading at times as to whether a place is technically a town or a village; in the event of any mistakes having been made we shall be glad to publish the necessary corrections:

NO.	CORPORATIONS.	POPULATION.	COUNTY.
	I. Cities.		
1.	Toronto	86,415	York
2.	Hamilton	35,961	Wentworth
3.	Ottawa	27,412	Carleton
4.	London	19,746	Middlesex
5.	Kingston	14,091	Frontenac
6.	Guelph	9,890	Wellington
7.	St. Catharines	9,631	Lincoln
8.	Brantford	9,616	Brant
9.	Belleville	9,516	Hastings
10.	St. Thomas	8,367	Elgin
	II. Towns.		
1.	Stratford	8,239	Perth
2.	Chatham	7,873	Kent
3.	Brockville	7,609	Leeds
4.	Peterborough	6,812	Peterborough
5.	Windsor	6,561	Essex
6.	Port Hope	5,585	Durham
7.	Woodstock	5,373	Oxford
8.	Galt	5,187	Waterloo
9.	Lindsay	5,080	Victoria
10.	Cobourg	4,957	Northumberland.
11.	Barrie	4,854	Simcoe
12.	Goderich	4,564	Huron
13.	Cornwall	4,468	Stormont
14.	Collingwood	4,445	Simcoe
15.	Owen Sound	4,426	Grey
16.	Ingersoll	4,318	Oxford
17.	Berlin	4,054	Waterloo
18.	Oshawa	3,992	Ontario
19.	London East	3,890	Middlesex
20.	Sarnia	3,874	Lambton
21.	Strathroy	3,817	Middlesex
22.	Dundas	3,709	Wentworth

23. Napanee	3,680		Lennox
24. Bowmanville	3,504		Durham
25. Petrolia	3,465		Lambton
26. St. Mary's	3,415		Perth
27. Paris	3,173		Brant
28. Whitby	3,140		Ontario
29. Prescott	2,999		Grenville
30. Picton	2,975		Prince Edward
31. Brampton	2,920		Peel
32. Orillia	2,910		Simcoe
33. Kincardine	2,876		Bruce
34. Pembroke	2,820		Renfrew
35. Orangeville	2,847		Dufferin
36. Listowel	2,688		Perth
37. Almonte	2,684		Lanark
38. Amherstburgh	2,672		Essex
39. Simcoe	2,645		Norfolk
40. Clinton	2,606		Huron
41. Walkerton	2,604		Bruce
42. Perth	2,467		Lanark
43. Thorold	2,456		Welland
44. Niagara Falls	2,347		Welland
45. Mitchell	2,284		Perth
46. Mount Forest	2,170		Wellington
47. Waterloo	2,066		Waterloo
48. Newmarket	2,006		York
49. Tilsonburg	1,939		Oxford
50. Welland	1,870		Welland
51. Meaford	1,866		Grey
52. Palmerston	1,828		Huron
53. Harriston	1,772		Wellington
54. Oakville	1,710		Halton
55. Niagara	1,440		Lincoln
56. Milton	1,302		Halton
57. Sandwich	1,143		Essex
58. Durham	1,059		Grey

Villages.

1. Yorkville	4,825		York
2. Trenton	3,042		Hastings
3. Gananoque	2,871		Leeds
4. Seaforth	2,480		Huron
5. Arnprior	2,147		Renfrew
6. Smith's Falls	2,087		Lanark
7. Dresden	1,979		Kent
8. Carleton Place	1,975		Lanark
9. Hawkesbury	1,920		Prescott
10. Wingham	1,918		Huron
11. Uxbridge	1,824		Ontario
12. Dunnville	1,808		Welland
13. Port Perry	1,800		Ontario
14. Merritton	1,798		Lincoln
15. Portsmouth	1,734		Frontenac
16. Fergus	1,733		Wellington
17. Exeter	1,725		Huron
18. Morrisburg	1,719		Dundas
19. Port Colborne	1,716		Welland
20. Deseronto	1,670		Hastings
21. Forest	1,614		Lambton
22. Renfrew	1,605		Renfrew
23. London West	1,601		Middlesex
24. Brighton	1,547		Northumberland
25. Aurora	1,540		York
26. Aylmer	1,540		Elgin
27. Parkhill	1,539		Middlesex
28. Ridgetown	1,538		Kent
29. Wallaceburg	1,525		Kent
30. Georgetown	1,471		Halton
31. Preston	1,419		Waterloo
32. Campbellford	1,418		Northumberland
33. Leamington	1,411		Essex
34. Norwich	1,411		Oxford
35. Port Elgin	1,400		Bruce
36. Elora	1,387		Wellington
37. Point Edward	1,293		Lambton
38. Ashburnham	1,266		Peterborough
39. Arthur	1,257		Wellington
40. Caledonia	1,242		Haldimand
41. New Hamburg	1,240		Waterloo
42. Blenheim	1,212		Kent
43. Kemptville	1,188		Grenville
44. Bradford	1,176		Simcoe
45. Parkdale	1,170		York
46. Lucknow	1,162		Huron
47. Fenelon Falls	1,155		Victoria
48. Paisley	1,154		Bruce
49. Millbrook	1,148		Durham
50. Port Dover	1,146		Norfolk
51. Southampton	1,141		Bruce
52. Watford	1,132		Lambton
53. Port Dalhousie	1,129		Lincoln
54. Waterford	1,118		Norfolk
55. Alliston	1,099		Simcoe
56. Midland	1,095		Simcoe
57. Penetanguishene	1,089		Simcoe
58. Colborne	1,079		Northumberland
59. Burlington	1,068		Halton
60 Madoc	1,065		Hastings
61. Newcastle	1,060		Durham
62. Stayner	1,028		Simcoe
63. Iroquois	1,001		Dundas

The only county towns with less than 1000 of a population are the villages of:

L'Orignal	858	Prescott
Cayuga	830	Haldimand

MISCELLANEOUS.

In our June number we gave the boundaries of the four new districts into which the North-west territory had just then been divided. It is now rumored that the region west of Manitoba is to be re-arranged into two new provinces, Qu'Appelle and Saskatchewan, the former extending from Manitoba to the third principal meridian, and the latter from that meridian to the Rocky Mountains.

It is further rumored that Regina, the new town located on "Pile-of-bones" creek, is to be the capital of Qu'Appelle, and Edmonton of Saskatchewan.

Mathematical Department.

INDIRECT DEMONSTRATIONS.

A well-known mathematical writer states that "Indirect demonstrations are often less esteemed than direct demonstrations." Another observes that "The indirect is, in general, less readily appreciated by the learner than the direct form of demonstration. The indirect form, however is equally satisfactory, as it excludes every assumed hypothesis as false except that which is made in the enunciation of the proposition." He then proceeds to notice that Euclid employs indirect proofs like those of I. 6, 14, etc., and indirect proofs like those of I. 19, 25, etc., in which it is shown that neither side of a possible alternative can be true, and from this the truth of the proposition is inferred.

All proofs of this kind depend on the *Principle of the Excluded Middle*, which was known to the earliest Greek logicians, and is thus enunciated by Thompson:—"Either a given judgment must be true, or its contradictory; there is no middle course. In other words if two propositions are contradictory one of them must be true, and the other false, so that the proof of a proposition forces us to abandon its contradictory, and the disproof of a proposition compels us to accept its contradictory." Or, as Mr. Mill states it, "That the premises cannot be true if the conclusion is false, is the unexceptionable foundation of the legitimate mode of reasoning called a *reductio ad absurdum*."

For example, in the sixth proposition of Euclid I. the question to be decided is whether two certain lines are *equal* or *not equal* under given conditions. The only possible suppositions are expressed by the two directly contradictory propositions: The two lines are equal; the two lines are not equal. As there is no tenable supposition intermediate between these two extremes, all middle ground is excluded. We cannot, for instance, assume the middle position: the two lines are partly equal and partly unequal. The proof then proceeds to test the truth of the second proposition by deducing conclusions from it. It is found to lead to the conclusion, a part of a line is equal to the whole of that line, and this conclusion is known to be false. Hence we infer that the second pro-

position itself is false; for if the consequent be false, the antecedent must be false also. At this stage the argument may be thus summed up: There are two possible suppositions; one of these must be true and the other false; but the second supposition is shown to be false, because it leads to a false conclusion. The final inference is then irresistible; the second supposition is false, therefore the first is true, for these two exhaust all possible assumptions.

In proposition 14, the question is whether BD coincides with CB produced. The contradictory propositions are: BD coincides with CB produced; and BD does not coincide with CB produced. The second proposition is false, for it leads to the false conclusion: the whole of an angle is equal to a part of that angle. Then, since the second proposition is false, its contradictory, the first proposition, must be true. The words "In the same way it may be demonstrated, etc.," which occur near the end of some of these proofs seem to be the source of the uncertainty that learners often feel after reading one of these indirect demonstrations in geometry. When the proof is rigidly stated these words appear to be superfluous, and calculated to produce only confusion of thought. It would be an improvement to state all these proofs in such a way as to avoid the use of the words "In the same way, etc," which leave a learner under the wrong impression that there is something further necessary before the conclusion inevitably follows from the demonstration.

In proposition 19 and one or two others there is a slight variation from the preceding form of the *reductio ad absurdum*, but it must be noticed that the assumptions are really dichotomous and not tripartite as at first they appear. Thus in the 19th the two contradictory propositions are, (1) AC is greater than AB, (2) AC is not greater than AB. Now (2) includes the two propositions (3) AC is equal to AB, and (4) AC is less than AE, and it includes no others. The demonstration shows that (3) and (4) both lead to conclusions known to be false, that is, it shows that (2) in all cases leads to false conclusions, and is therefore itself false. The inference then follows as before (1) is true because its contradictory is false.

It may be worth while to point out that when this form of proof is applied to questions of government, history, political economy, medicine, criminal law, etc., in which there may perhaps be a vast number of hypotheses possible, it is necessary to exercise extreme care to exhaust all possible assumptions. If we leave a single hypothesis under the second contradictory proposition not disproved, we cannot legitimately infer the truth of its contradictory, viz.: the first proposition. Hence if we are able to disprove only some of the assumptions under (2) we can arrive at a probability only and not at a certainty of the truth of (1). For example, a murder is perpetrated under circumstances which seem to show that it must have been committed by some one or more of these ten prisoners, and that it is not possible for anyone else to be guilty. The prosecution may then proceed to prove an *alibi* for nine of the prisoners, and thus bring home the crime to the tenth by eliminating piece by piece the assumption: the tenth man is not guilty. It is just at this point that circumstantial evidence often fails to convince the jury, by failing to convince them that the crime might not have been otherwise committed; or, having convinced them, turns out to have been insufficient by overlooking some hypothesis which afterwards proves to be the true one, *e.g.*: the deed was done by an eleventh man, not enumerated at the trial. In mathematics, however, there is usually no difficulty whatever in exhausting the whole possibility, so that not the least shadow of uncertainty hangs over the conclusion.

Mr. Potts remarks "that one of the most common intellectual mistakes of learners, is to imagine that the denial of a proposition is a legitimate ground for the assertion of the contrary as true; whereas the rules of sound reasoning allow that the affirmation of a proposition as true, affords a ground only for denial of the contrary as false." It is necessary to distinguish *contrary* from *contradictory* propositions. We shall conclude with an extract from Mr. Mill's chapter on fallacies, which will suitably complete our view of the indirect demonstration by showing the sophisms to which that kind of proof is liable, and will also illustrate and explain the preceding statement of Mr. Potts:—"I believe errors of this description to be far more frequently committed than is generally supposed, or than their extreme obviousness might seem to admit of. For example, the simple conversion of an universal affirmative proposition: All A are B, therefore all B are A, I take to be a very common form of error; though committed, like many other fallacies, oftener in the silence of thought than in express words. And so of another form of fallacy, not substantially different from the preceding; the erroneous conversion of an hypothetical proposition. The proper converse of an hypothetical proposition is this: If the consequent be true, the antecedent is false; but this: If the consequent be true the antecedent is true, by no means holds good, but is an error corresponding to the simple conversion of an universal affirmative. Yet hardly anything is more common than for people, in their private thoughts, to draw this inference. As when the conclusion is accepted, which it so often is, for the proof of the premises. Men continually think and express themselves as if they believed that the premises cannot be false if the conclusion is true. The truth, or supposed truth of the inferences which follow from a doctrine, often enables it to find acceptance in spite of gross absurdities in it. How many systems of philosophy, which had scarcely any intrinsic recommendation, have been received by thoughtful men because they were supposed to lend additional support to religion, morality, some favorite view of politics, or some other cherished persuasion? not merely because their wishes were thereby enlisted on that side, but because its leading to what they deemed sound conclusions appeared to them a strong presumption in favor of its truth: though the presumption when viewed in its true light, amounted only to the absence of that particular kind of evidence of falsehood, which would have resulted from its leading by correct inference to something already recognized as false.

Again the very frequent error in conduct of mistaking reverse of wrong for right, is the practical form of a logical error with respect to the Opposition of Propositions. It is committed for want of the habit of distinguishing the *contrary* of a proposition from the *contradictory* of it, and of attending to the logical canon, that contrary propositions, though they cannot both be true, may both be false. If the error were to express itself in words it would run distinctly counter to this canon. It generally, however, does not so express itself, and to compel it to do so is the most effectual method of detecting and exposing it.'

HIGH SCHOOL ENTRANCE EXAMINATIONS.

SOLUTIONS.—ARITHMETIC.

1. Define *greatest common measure*. State the principle on which the rule for finding the G. C. M. of two numbers depends.

Find the G. C. M. of *sixty-eight million five hundred and ninety thousand one hundred and forty-two*, and *eighty-five million fifty-four thousand and fifty-nine*.

The G. C. M. of two or more numbers is their greatest common factor. Usually the name is restricted to *integral* factors. Every measure of two or more numbers will also measure the sum or the difference of any multiples of these numbers.

4	68590142	85054059	1
4	2734474	16463917	6
7	45155	57073	1
10	52043	5030	2
1	1743	1544	7
1	199	151	3
	48	7	

Now 48 and 7 are prime to each other.. the given numbers have no G. C. M.

N. B.—We have used the combined method of multiplication and subtraction, see *Elementary Arithmetic* in previous number. The quotients are placed on the outside columns.

2. A dealer bought 8 carloads of lumber, each containing 9870 feet, at $13.50 per M. He retailed it at $1.43 per 100 feet. Find his gain on the whole lot.

Gain per M. $= 14.30 - 13.50 = .80$

$\therefore$ " per ft. $= \frac{8}{100} = \$\frac{8}{1000}$

Total gain $= 9870 \times 8 \times \frac{8}{1000} = 987 \times 8 \times 8 = \$63.16\frac{4}{5}$.

3. Show that $\frac{3}{4} = \frac{6}{8}$, and that $\frac{3}{8} \div \frac{4}{5} = \frac{10}{12}$

Simplify the following:—

$$\frac{26\frac{3}{7} - 1\frac{13}{21}}{\frac{4}{5} + 1\frac{1}{3} - \frac{3}{8} \text{ of } \frac{17\frac{1}{2}}{12} \text{ of } \frac{5}{6} \div \frac{3}{14}} \text{ of } \frac{5\frac{1}{2}}{521}$$

Book-work. See June number of this JOURNAL.

$$N = 26\tfrac{3}{21} - 1\tfrac{13}{21} = 24\tfrac{7}{21} \times 63 = \frac{1512+51}{63+28} = \frac{1563}{91}$$

$$D = 1\tfrac{7}{5} - \tfrac{3}{5} \times \tfrac{24}{14} \times \tfrac{5}{6} \times \tfrac{14}{36} = 1\tfrac{3}{5} \times 63$$

$$\therefore \text{Exp.} = \frac{1563}{91} \times \frac{11}{2 \times 521} = \frac{33}{182}$$

4. Prove that $2 \cdot 3 \times .04 = .092$

Add together 154·2125, ·5421, ·0001235, 741·206, ·03 and 4567·0004.

Reduce 75·0125 cwt. to ounces.

$\frac{23}{10} \times \frac{4}{100} = \frac{92}{1000}$. Ans. = 5462·9911245.

Ounces = $7501\frac{1}{4} \times 16 = 120020$.

5. A steamer makes a nautical mile (6072 feet) in 3 minutes and 50 secs. Find her rate per hour in statute (common) miles.

In $2\frac{3}{6}$ min. goes 6072 ft.

∴ " 1 " " $6072 \times \frac{6}{23}$ ft.

or " 1 hour " $(6072 \times \frac{6}{23} \times 60) \div 5280$, miles = 18.

6. There is a solid pile of bricks which is 36 ft. long, 16 ft. 6 in. wide, and 14 ft. 6 in. high, and contains 122496 bricks of uniform size; each brick is 9 in. long and $4\frac{1}{2}$ in. wide; find its thickness.

$122496 \times \frac{9}{12} \times \frac{9}{24} \times \text{thickness} = 36 \times 16\frac{1}{2} \times 14\frac{1}{2}$

i. e. thickness $= \frac{36 \times 33 \times 29 \times 24 \times 12}{2 \times 2 \times 9 \times 9 \times 122496} = \frac{1}{4}$ ft. = 3 inches.

7. A London merchant transmits £250 10s. through Paris to New York: if £1 = 24 francs, and 6 francs = $1.14, American currency, what sum in American currency will the merchant realize?

£1 = 24 francs = $1.14 × 4

∴ £250 10s. = $1.14 × 4 × 250½

= $1.14 × 1002 = 1140 + 2.28 = $1142.28.

8. In a map of a country the scale is $\frac{1}{10}$ of an inch to a mile (*i.e.*, $\frac{1}{10}$ of an inch represents a mile), and a township is represented on this map by a square whose side is half an inch. How many acres in a township?

If $\frac{1}{10}$ represents 1 mile, and $\frac{5}{10}$ represents 5 miles = one side of square township.

∴ Number of acres = $5^2 \times 640 = 16000$.

9. If 4 men and 6 boys can do a piece of work in 8 days, how long will it take 8 men and 4 boys to do such a piece of work?

In 1 day 8 men + 4 boys do $\frac{1}{8} + \frac{1}{12} = \frac{1}{3}$ ∴ time = 3 days.

10. A. and B. were candidates for election in a constituency of 2760 voters. The votes polled by A. were to the votes polled by B. as 23 to 25, and B. was elected by a majority of 100. How many persons did not vote?

In every 48 votes, 23 were for A., 25 for B.

∴ $(\frac{25}{48} - \frac{23}{48})$ total votes given = 100 = $\frac{1}{24}$ total votes given.

∴ total votes cast = 2400. Ans. 360.

VICTORIA COLLEGE—MATRICULATION.

ALGEBRA—HONORS.

J. A. MCLELLAN, LL.D., EXAMINER.

1. With respect to what quantities is $a^3 - b^3 - c^3 - 3abc$ symmetrical? *Ans.* $+a, -b, -c$.

Write down the function of a, b, c, d which is symmetrical with $a^3+b^3+c^3-3abc$ and its quotient when divided by $a+b+c+d$.

(*a*) In given expression we have the sum of the cubes—three times the products of a, b and c taken three and three together; therefore the function of a, b, c, d is $(a^3+b^3+c^3+d^3) - 3(abc+abd+acd+bcd)$.

(*b*) $(a^3+b^3+c^3-3abc) \div (a+b+c) = a^2+b^2+c^2-ab-bc-ca$ therefore by symmetry the function of a, b, c, d is $a^2+b^2+c^2+d^2-ab-bc-cd-da-ac-bd$

2. Show that $(x+y+z)^7 - (x^7+y^7+z^7)$ is exactly divisible by $(x+y+z)^3 - (x^3+y^3+z^3)$; and find the values of a and b which make $x^4+2x^3-10x^2-ax+b$ vanish when $x^2 = 3(x-1)$.

(*a*) We see by inspection that both expressions vanish when $(x+y)$, $(y+z)$, or $(z+x)$ vanishes. Hence each expression is divisible by $(x+y)(y+z)(z+x)$. Now the second expression can have no other literal factors, for it is of only three dimensions, and must therefore = N $(x+y)(y+z)(z+x)$, where N is some numerical factor. Thus 2nd expression contains 1st.

(*b*) If $x^2 = 3(x-1)$, $x^2 - 3x + 3 = 0$; and if this be a factor of $x^4 + 2x^3$, &c., the latter will vanish. Hence divide the latter by $x^2 - 3x + 3$. Using Horner's method, and detached coeffts.:

1	1 + 2 − 10	− *a* + *b*
+ 3	+ 3 − 3	− 15 − 6
− 3	+ 15	+ 6
	1 + 5 + 2	

Now in order that $x^2 - 3x + 3$ may be an exact factor the last two columns must separately vanish, *i. e.*, a must = −9 and b = 6.

3. Find the simplest form of—

$$\frac{\sqrt{a^2+x^2} + \sqrt{a^2-x^2}}{\sqrt{a^2+x^2} - \sqrt{a^2-x^2}} - \left\{ \frac{a^4}{x^4} - 1 \right\}^{\frac{1}{2}}$$

and examine the following reasoning, viz.:

$$(-1)^{\frac{1}{2}} = (-1)^{\frac{2}{4}} = \left\{ (-1)^2 \right\}^{\frac{1}{4}} = (+1)^{\frac{1}{4}} = +1$$

(*a*) Rationalising and reducing we have

$$\frac{a^2 + \sqrt{a^4-x^4}}{x^2} - \frac{\sqrt{a^4-x^4}}{x^2} = \frac{a^2}{x^2}$$

(*b*) This involves a fallacy. $(+1)^{\frac{1}{4}}$ has four values, for if $x = (+1)^{\frac{1}{4}}$, $x^4 = 1$, *i. e.* $(x^2+1)(x+1)(x-1) = 0$

∴ $x = 1, -1, \pm\sqrt{-1}$. And the fallacy consists in selecting the wrong root. If we take the last root with the lower sign the statement will be perfectly correct.

4. If $\frac{a}{b} = \frac{c}{d}$, show that $\sqrt{\frac{a^{2n}+b^{2n}}{c^{2n}+d^{2n}}} = \left(\frac{a-b}{c-d}\right)^n$.

The usual method, putting $\frac{a}{b} = \frac{c}{d} = x$, &c., gives an easy solution. It is far better practice, however, for the student to solve all such questions *constructively*.

$\frac{a^{2n}}{b^{2n}} = \frac{c^{2n}}{d^{2n}}$ ∴ $\frac{a^{2n}+b^{2n}}{b^{2n}} = \frac{c^{2n}+d^{2n}}{d^{2n}}$ by adding 1 to each side.

∴ $\sqrt{\frac{a^{2n}+b^{2n}}{c^{2n}+d^{2n}}} = \frac{b^n}{d^n}$. Similarly $\left(\frac{a-b}{c-d}\right)^n$ may be shewn $= \frac{b^n}{d^n}$.

5. I invest $\$p$ in the m % stock when the stock is at $\$a$, and $\$q$ in the n % stock when it is at $\$b$. What percentage do I get on my whole capital $\$(p+q)$?

In 1st stock p buys $100p \div a$, on which income $= mp \div a$.

In 2nd stock q " $100q \div b$, " " $= nq \div b$;

or whole income $= \frac{mp}{a} + \frac{nq}{b}$ on $(p+q)$.

∴ income on \$100 $= \frac{100(bmp + anq)}{ab(p+q)}$.

6. Define a root. What is the difference between the equation $(x-3y)(x-4y+5) = 0$ and the simultaneous equations $x - 3y = 0$ and $x - 4y + 5 = 0$? Solve the equation $(2a-b-x)^2 + 9(a-b)^2 = (a+b-2x)^2$.

(*a*) The root is that quantity which when substituted in the given equation for the unknown quantity reduces the equation to the form 0 = 0, if all the terms are brought to one side of the equation.

(*b*) The first equation is of the second degree, each of the simultaneous equations is of the first degree.

(*c*) Expanding and arranging in powers of x we get

$$x^2 - 2bx - (4a^2 - 8ab + 3b^2) = 0$$

or $x^2 - 2bx - (2a-b)(2a-3b) = 0$

i. e., $\{x - (2a-b)\}\{x + (2a-3b)\} = 0$

∴ $x = 2a-b$ or $3b-2a$.

7. Show how to find n arithmetic means between a and b. Find the relation between a and b in order that the r^{th} mean between a and $2b$, may be the r^{th} mean between $2a$ and b, n means being inserted in each case.

(*a*) Whole series has $n+2$ terms,

∴ com. diff'ce $= \frac{b-a}{n+1}$ &c., book-work.

and the n^{th} mean $= \frac{a+nb}{n+1}$

(*b*) r^{th} mean $= \frac{a+2rb}{n+1} = \frac{2a+rb}{n+1}$ respectively.

Or $a = rb$.

8. Solve (1) $x^2 - yz = 1$, $y^2 - zx = 2$, $z^2 - xy = 3$

(2) $\sqrt[3]{\frac{a-x}{b+x}} + \sqrt[3]{\frac{b+x}{a-x}} = c$

(3) $y^2z = 2\sqrt{8}$, $z^2x = 3$, $x^2y = \sqrt{2}$.

(1) Add and $x^2+y^2+z^2-xy-yz-zx = 6$. (A).

Multiply 1st by x, 2nd by y, 3rd by z, add, factor, substitute from (A) and $(x+y+z)\,6 = x+2y+3z = 0$

or $5x + 4y + 3z = 0$. (B).

Again, multiply 1st by y, 2nd by z, 3rd by x, and add and $3x+y+2z = 0$. (C).

Combine B and C and $z = 7y$. Substitute this value of z in 1st

and 2nd and combine, and $x=-5y$. Substitute for x and z in 2nd and $y=\pm\frac{1}{6}\sqrt{2}$.

$\therefore x=\pm\frac{5}{6}\sqrt{2}$, and $z=\pm\frac{7}{6}\sqrt{2}$.

(2) Cube, and substitute c from the given equation,

$$\frac{a-x}{b+x}+\frac{b+x}{a-x}+3c\left[\frac{(a-x)\ (b+x)}{(b+x)\ (a-x)}\right]^{\frac{1}{3}}=c^3$$

$$\frac{a-x}{b+x}+\frac{b+x}{a-x}=c^3-3c.$$

Put $a-x=n$, $b+x=n$

$$\therefore\ \frac{m^2+n^2}{2mn}=\frac{c^3-3c}{2}$$

$$\therefore\ \frac{m+n}{m-n}=\left(\frac{c^3-3c+2}{c^3-3c+2}\right)^{\frac{1}{2}}=\pm k, \text{ suppose.}$$

$$\therefore\ \frac{m}{n}=\frac{k+1}{k-1}=\frac{a-x}{b+x}$$

$$\therefore\ \frac{a-x}{a+b}=\frac{k+1}{2k}\quad\therefore\ x=a-\frac{(a+b)(k+1)}{2k}$$

N. B.—We had $3c(1)^{\frac{1}{3}}$, for which we wrote $3c(1)$. But there are two other values for $(1)^{\frac{1}{3}}$ which will each give other solutions.

(3) Multiply all the equations together and take the cube root and $x\,y\,z^6\sqrt[6]{63}$. Substitute in this for y and z from equations two and three, and we have after reduction $\sqrt{6}\div\sqrt{x}=\sqrt[6]{63}$ $\therefore\ x=1$, $y=\sqrt{2}$, $z=\sqrt{3}$. Other values will be found by attending to the double signs.

9. If x_r represent the number of combinations of x things taken r in a set, prove that

(1) $x_r=x_{x-r}$

(2) $x_r+x_{r-1}\,y_1+x_{r-2}\,y_2+\ldots+x_1\,y_{r-1}+y_r=(x+y)_r$

(1) Whenever we remove a set of r out of the x things we leave a set of $x-r$. Hence there will be as many sets of $x-r$ as there are sets of r things.

(2) By the notation assumed

$$x_1=x \qquad x_1=x$$

$$x_2=\frac{x(x-1)}{1.2.}, \qquad \therefore\ 2x_2=(x-1)x.$$

$$x_3=\frac{x(x-1)\,(x-2)}{1.2.3.}, \qquad \therefore\ 3x_3=(x-2)x_2.$$

$$\&c.=\&c. \qquad \therefore\ \&c.=\&c.$$

$$x_r=\frac{x(x-1)(x-2)..(x-r+1)}{1.2.3.\ldots\ldots r}, \qquad \therefore\ rx_r=(x-r+1)x_{r-1}$$

Similarly, we have $y_1=y$, $2y_2=(y-1)y$, $3y_3=(y-2)y_2$ &c., and $ry_r=(y-r+1)\,y_{r-1}$

Now take the product of the two following series by actual multiplication thus,

$$1+x_1K+x_2K^2+x_3K^3+\ldots\ldots x_rK^r+\ldots.$$
$$1+y_1K+y_2K^2+y_3K^3+\ldots\ldots y_rK^r$$
$$1+C_1K+C_2K^2+C_3K^3+\ldots\ldots C_rK^r, \text{ suppose; in which}$$

$C_1=x_1+y_1=x+y$;

$C_2=x_2+x_1y_1+y_2$; $C_3=x_3+x_2y_1+xy_2+y_3$ &c, and

$C_r=x_r+x_{r-1}y_1+x_{r-2}y_2+$ &c. $x_1y_{r-1}+y_r$. Multiplying,

$rC_r=rx_r+\{1+(r-1)\}x_{r-1}y_1+\{2+(r-2)\}x_{r-2}y_2+$ &c. $+ry_r$.

$$\left.\begin{aligned}&=rx_r+(r-1)x_{r-1}y_1+(r-2)x_{r-2}y_2+\&c.\ldots\ldots\ldots\ldots+x_1y_{r-1}\\&+x_{r-1}y_1+2x_{r-2}y_2+3x_{r-3}y_3+\&c.\ldots\ldots\ldots\ldots\ldots\ldots+ry_r.\end{aligned}\right\}$$

$$\left.\begin{aligned}&=(x-r+1)x_{r-1}+(x-r+2)x_{r-2}y_1+(x-r+3)x_{r-3}y_2+\&c.+xy_{r-1}\\&+yx_{r-1}+(y-1)x_{r-2}y_1+(y-2)x_{r-3}y_2+\&c.+(y-r+1)y_{r-1}.\end{aligned}\right\}$$

$$=(x+y-r+1)x_{r-1}+(x+y-r+1)x_{r-2}y_1+(x+y-r+1)x_{r-3}y_2+\&c.$$
$$(x+y-r+1)y_{r-1}.$$
$$=(x+y-r+1)(x_{r-1}+x_{r-2}y+x_{r-3}y_2+\&c.+y_{r-1}).$$
$=(x+y-r+1)C_{r-1}$. Thus we have by giving r successive values,

$C_1=(x+y)$.

$2C_2=(x+y-1)C_1$.

$3C_3=(x+y-2)C_2$.

&c. = &c.

$rC_r=(x+y-r+1)C_{r-1}$. Multiply up and cancel, and

$1.2.3..rC_r=(x+y)(x+y-1)\ldots\ldots(x+y-r+1)$.

i. e. $C_r=\dfrac{(x+y)(x+y-1)\ldots\ldots(x+y-r+1)}{1.2.3.\ldots\ldots r}$

$=(x+y)_r$, which is the theorem enunciated in the question.

10. Sum the series $2+6x+12x^2+20x^3+\ldots\ldots$ *ad. inf.*

Let $S=1+3x+6x^2+10x^3+\ldots\ldots$

$\therefore\ S(1-x)=1+2x+3x^2+4x^3+\ldots\ldots$

and $S(1-x)^2=1+x+x^2+x^3+\ldots.=\dfrac{1}{1-x}$.

i. e., series $=2S=\dfrac{2}{(1-x)^3}$, which may easily be verified by synthetic division.

11. Prove that the sum of the products of the first n natural numbers taken two and two together is $\frac{1}{12}\,n(n^2-1)(3n+2)$.

In the expansion of $(a+b+c+\&c.)^2$, the sum of the double products=twice the sum of the products of a, b, c, &c., taken two and two together; considering a^2, b^2, c^2, &c., as not double products.

Now $(1+2+3+4+\&c.+n)^2=(n+1)^2\,\dfrac{n^2}{4}$.

$=(1^2+2^2+3^2+\ldots\ldots+n^2)+2(1.2+1.3+\&c.)$

$\therefore\ \frac{1}{6}n(n+1)(2n+1)+2(1.2+1.3+\&c.)=(n+1)^2\dfrac{n^2}{4}$

i. e. $(1.2+1.3+\&c.)=(n+1)^2\dfrac{n^2}{8}-\frac{1}{12}n(n+1)(2n+1)$.

$=n(n+1)\{\frac{1}{8}n(n+1)-\frac{1}{12}(2n+1)\}$.

$=\frac{1}{24}n(n^2-1)(3n+2)$, as required, for the $\frac{1}{12}$ is evidently a misprint for $\frac{1}{24}$, and the latter is easily verified by giving n successive values.

12. Show that the coefficient of x^n in the expansion of $(1-x)^{-n}$ is equal to the sum of all the preceeding coefficients. Find three terms of the expansion of $\left(\dfrac{1+x^n}{1-x^{2n}}\right)^{\frac{1}{3}}$.

(1)

$$(1-x)^{-n}=1+nx+\frac{n(n+1)}{1.2.}x^2+\ldots\ldots=\frac{n(n+1).\ldots.(2n-1)}{1.2.\ldots\ldots.n}x^n+\&c.$$

$$(1-x)^{-4}=1+x+x^2+\ldots\ldots\qquad\qquad+\&c.$$

$\therefore\ (1+n)^{-(n+1)}=$product of the two series.

Now the coefficient of x^{n-1} on each side must be the same.

$\therefore 1+n+\dfrac{n(n+1)}{1.2}+\ldots\ldots\dfrac{n(n+1).\ldots\ldots(2n-2)}{1.2.3.\ldots\ldots(n-1)}$, in the product.

$=\dfrac{(n+1)\,(n+2)\ldots\ldots(2n-1)}{1.2.3.\ldots\ldots(n-1)}$ in the expansion

$=\dfrac{n(n+1)(n+2)\ldots\ldots(2n-1)}{1.2.3.\ldots\ldots n}$ which is the coefficient of x^n in the expansion of $(1-x)^{-n}$.

(2)

$$\left(\frac{1+x^n}{1-x^{2n}}\right)^{\frac{1}{3}}=(1-x^n)^{-\frac{1}{3}}=1+\tfrac{1}{3}x^n+\frac{1.4}{1.2.9}x^{2n}+\frac{1.4.7}{1.2.3.27}x^{3n}$$
$$=1+\tfrac{1}{3}x^n+\tfrac{2}{9}x^{2n}+\tfrac{14}{81}x^{3n}.$$

Special Articles.

ENGLISH TEXTS FOR SCHOOL USE.

BY A STUDENT OF ENGLISH LITERATURE.

The threatened withdrawal of "Marmion" from the high school programme has turned public opinion to an important aspect of educational work. Availing myself of the interest thus aroused I would like to add my humble contribution to the discussion which has not yet entirely died out.

I believe heartily in the policy of studying English literature by means of texts, and I believe just as heartily in the value of such a course of study as a branch of education. A poem by Gray, Cowper, Wordsworth, or Tennyson is just as valuable as one by Horace, Virgil, Ovid, or Homer, as a means of expanding the ideas and training the mental powers of the pupil. The English language is just as perfect in its way as either Latin or Greek, and English poetry is just as noble a production as either of its more ancient rivals.

Fortunately it is not now necessary to fortify such a position by arguments. In Canada as well as in England the disgrace of being chargeable with neglect of our own language and literature is being rapidly wiped out. The past five years have witnessed a

change which amounts to a revolution. What is wanted now is not so much impulse as proper direction. It is of the utmost importance that the texts chosen should be the best available, and it is to the question of selection that I propose briefly to address myself.

The work of selection for high schools has, by a kind of accidental arrangement, been performed for some years past by the Senate of the University of Toronto. It is a good thing for the high schools to have the same works in English prescribed for university and intermediate work, and therefore the arrangement referred to is a useful one, but the work of selection is not easy and the Senate has certainly not made the best possible choice for this year. I have no hesitation in saying that neither "Marmion" nor Burke's "Reflections" should have been put on the list, and of the two the "Reflections" is the more objectionable.

A moment's consideration will show the correctness of this view. Taking the "Reflections" first I remark, in the first place, that Burke's style is utterly unsuited for juvenile perusal. I am not going to question his intellectual and rhetorical preëminence or dispute his title to a high position amongst the master minds of all the ages. But that very title is my chief reason for objecting to him. Who would think of prescribing a play of Shakespeare or a book of "Paradise Lost" for the intermediate examination? And yet either of them would be quite as suitable as anything Burke ever said or wrote. But even if his style were suitable the matter of the "Reflections" is not. When he wrote that celebrated pamphlet he was in a morbid frame of mind, and every page of it shows that he was so. It made him the idol of the Court and of the reactionary "Jingos" of his own day, but it inculcates an utterly erroneous and unphilosophical view of one of the great events of history. Why should young Canadians be taught that the French Revolution was a huge crime and nothing more, when they see a French Republic in successful operation in their own day as its result? What sympathy have free people in America with either misgoverning Bourbons or a licentious and blood-sucking aristocracy? It is well known that Fox and other political associates of Burke did in his own day take a sounder and more philosophical view of the Revolution than he did; but he was unable, like them, to separate the temporary and accidental concomitants of the movement from its permanent and beneficent characteristics, and because they would not join in his angry and undiscriminating crusade he cut them off from his friendship And when we have the whole list of British essayists to select from why have such a pamphlet as Burke's "Reflections" stuck into the hands of our boys and girls!

"Marmion" is, as I have already said, less open to reasonable objection. I take no stock whatever in the charge of immorality recently levelled against it. Those who condemn it as immoral either have never read it or are afflicted with pruriency of a most pronounced type. There is some force—but not much—in the objection that it is in some passages offensive to Roman Catholics. Those who feel offended at it on this score are over sensitive, for Scott only makes use, as a poet, of certain local traditions, and he does so without intending the slightest disrespect to the Roman Catholic church. As well might Puritans and Cameronians object to "Old Mortality," or "The Heart of Mid-Lothian," or to Macaulay's "Marston Moor," or Praed's "Naseby." When will people learn that a poem like "Marmion" is a work of art and not a polemical effusion?

My main objection to "Marmion" is that we have already had enough of Scott. The "Lady of the Lake" has been in our hands for four years and it was surely some other poet's turn. Good as Scott's poetry is there is other poetry of the nineteenth century quite as good, and some of it should have been selected instead of "Marmion." Why not take such a piece as Wordsworth's "Hart-Leap Well" for instance, or his "Resolution and Independence," or his "Ode on the Intimations of Immortality?" Then we have plenty of room to select from Keats, Tennyson, Shelley, or Byron without taking anything objectionable; and why exclude Longfellow and the other American poets, to say nothing of Washington Irving and other writers of essays and sketches? Or, if a Scottish poet must be selected why not try a piece from Burns? Surely something could be culled from Moore worth a careful reading, unless his nationality be an objection.

I hope to see a little more care in the selection of texts for future years, but meanwhile it is absurd to think of totally withdrawing "Marmion" from this year's programme. My own and other objections are too late after the books are in the hands of the pupils and students.

THE BEARINGS OF PSYCHOLOGY ON EDUCATION.*

The functions of intellect may be included under the three heads,—mental comparison, generalization, and retentiveness.

1. MENTAL COMPARISON.—This is the function by which we recognize differences and discover agreements. The like and the unlike are revealed by the same faculty. Consciousness of difference is the beginning of every intellectual exercise. To experience a new impression is to recognize change, and a present experience is recognized as different from or similar to a foregoing, by the faculty which the mind possesses of contrasting and comparing our experiences. The young child cries when the accustomed light is removed from the room, because it has experienced a change of feeling; if the fire in our room is allowed to go out, we are awakened to the fact by a change of feeling. Consciousness of change, then, or discrimination is the starting point of intellect; and further, our intelligence is absolutely limited by our power of discrimination. The recognition of difference must precede memory, as it furnishes material for the retentive faculty. I do not believe that what is known as the development theory of the origin of knowledge is a true one That theory begins with sensation, which it regards as the simplest state of consciousness, and it makes all the more complex states of consciousness merely developments from this primary state The adherents of this theory identify sensation and consciousness, and this position I believe to be untenable. Sensation is not consciousness If we had but a sensuous nature, sensations, as we experience them, would be impossible. We know sensations in contrast. We are conscious of sensations related to one another. This particular sensation is known as distinct from that other. We compare, we contrast, we know the sensations as bearing a certain relation to one another. Now it seems evident that this knowledge is not furnished by sense. Surely the apprehension of relations involves a super sensuous element. In fact the simplest experience is only possible on the supposition of a higher faculty of mind than sense, viz., the understanding.

Notwithstanding this, it is true, as Prof. Bain puts it, that "the blank of sensation is a blank of memory" Sense furnishes the material of knowledge, and if nothing be felt, of course nothing can be remembered. It is further true that the number and variety of our stored-up recollections depend on the exactness and delicacy of our recognition of differences The power of discrimination is not alike in all persons, and this in a great measure accounts for disparity in intellectual character, and variety in likings and pursuits, and it is of importance to note this native inequality in order to predestine the child to a particular profession or calling; but this

* Abridged from a paper read by James McMurchie, M.A., before the teachers' association of North Wellington.

does not fall within the province of the teacher. It is for him to note the ways and means of quickening and strengthening the power of discrimination. Our intelligence being absolutely limited by our power of detecting differences, the teacher is bound to consider what helps and what hinders the exercise of this fundamental function. The following are some of the conditions favorable to the exercise of the faculty of comparison :—

1. *Mental Watchfulness. This in fact is a condition of every intellectual function.* In a languid, drowsy state, differences cannot be recognized, and it is proper for the teacher to employ any legitimate artifices that will arouse the pupil's mental activities from a state of indolence.

2. The energies must be directed in the right channel. There should be no waste of the mental powers from their being misapplied. There is a well recognized antithesis between the emotional and intellectual activities, which should never be lost sight of; strong emotional excitement is inconsistent with great intellectual energy; when emotion reigns, intelligence becomes its feeble slave. It is in our calmer state of mind that comparison or any other power of intellect works to advantage.

3. Some interest must attach to the difference or agreement to be recognized. It must be the reverse of insipid and uninviting that the mind may become alive to it, that a mental affection may be aroused.

4. Immediate succession or juxtaposition is a great aid to the discovery and retention of a difference or an agreement. When the transition is sudden, and the mind is not occupied with anything else in the meantime, so much the better for the detection. Magnitude, for example, is an affair of simple juxtaposition.

II. GENERALIZATION.—We find similarity in the midst of diversity, we detect like in the midst of the unlike; but there is a higher intellectual exercise than this. We find that several things agree in some particular. For example, if we stand near the fire we experience a certain sensation; if we place ourselves under the direct influence of the sun's rays we experience a similar sensation; if we lay our hand on the fevered brow, or subject a portion of the body to friction, a similar sensation occurs. Now the mind takes hold of these points of similarity (taking no account of the diversity of the circumstances in which the sensations occur), and unites them into one general idea, the name for such an idea being a general term. Half of our knowledge, and that the most difficult half, is obtained in this way. The child can compare and contrast before it possesses in any measure the power of generalization. The presence of the individual differences obscures the agreement and renders the discovery difficult.

Cumulation of the instances is of great use in driving home a generality. The oftener the point of agreement can be repeated, the more the instances can be multiplied, the greater becomes the certainty that an adequate idea of a general truth will be produced. In generalization the interest belonging specially to the individual examples is constantly competing for and obtaining a share of the attention, and seduction from this quarter must be guarded against.

The emotions should be calm and undisturbed, as it is only then that the higher intellectual exercises are possible. The learning of what is absolutely new is a difficult exercise it makes heavy demands on the plastic power of the mind, and as it involves a heavy expenditure, it requires time. There is, however, great similarity in nature and in art; if we learn all about one plant, for example, we can more easily learn all about all others of the same class. If we are thoroughly versed in the French language, we can more easily master the Italian.

With every increase of knowledge we make an inroad into what is new and lessen its territory, so that a great deal of what we learn is the old in a new form, and the adhesive faculty has not to be drawn on to such an extent as at the beginning. Now it is a very useful and stimulating device of the teacher to make his pupils see the old in the new, to help them to recognize an old friend in a new dress.

III. RETENTIVENESS.—All mental acquirement, all increase of knowledge, is due to the fact that we are endowed with a retentive faculty. Every cognition has a certain permanence, and it can be repeated in idea, in other words, it can be remembered. Repetition and time are required to give an impression permanence. Constant reviewing is needed in all, but especially in junior classes. If one teacher can root an impression in the minds of his pupils by fewer repetitions than another, he is a better teacher. He is economizing in a very important department, viz., in the plastic power of the system.

One of the conditions favorable to the development of that power is good health. The system must be properly nourished, and the brain should receive its fair share of nutrition. It is said that there is a greater expenditure of brain force in rooting lasting impressions than in any other mental exercise. It is certain that the storing of the memory makes very high demands on brain energy, and consequently it must not be too long continued. The severity of the exercise is the reason for not prolonging it. We can go only a certain distance with any profit. There are times when we are utterly incapable of receiving lasting impressions, and yet the mind may have a fair share of reserve force. Although incapable of acquiring what is absolutely new, it may be capable of applying known principles to new cases, e. g., solving new problems. Reading from a book, noting and arranging new facts, may be done with a very small degree of brain force. The energy of the system is at its height in the early part of the day, and declines as the day advances. What is altogether new should be undertaken in the morning, the lighter tasks being left for the afternoon, and constructive and mere routine exercises for the evening. These considerations have a direct bearing on the formation of a time-table. The principle of alternation of studies, which will be mentioned again, should also have due weight when we draw up our time-table.

This development requires concentration. This word, in fact, sums up all the mental aids to retentiveness. Every new impression stamped on the memory involves, as we have already said, a certain expenditure of mental power, and the more the power expended the more ineffaceable is the impression. How necessary then that there should be no misapplication of power, no mental waste. The subject before us should receive all our attention. We should allow no rivals in the field. It being granted that our powers should be turned into the proper channel and kept there, the inquiry arises, what is the agent to be used for this purpose? and the further inquiry, how does this agent act? I answer (1) the agent to be used is the will, and (2), the will acts from motives. The chief motives which influence the will are pleasure and pain.

The most powerful motive to concentration is pleasure *in esse*—pleasure in the act itself. When the exercise is productive of pleasure, the will consents to the employment of all our mental force. Immediate pleasure is the feast enjoyed, and for the sake of prolonging this delightful feast, there is concentration of the mental powers on the proper object. Pleasure assists the memory also; an impression, when accompanied by pleasure, is more enduring; but the pleasure must not be intense, for it then becomes a disturbing element. A gentle and growing pleasure is the most favorable. Even should there be pain at first, and it should gradually pass into pleasure, the condition is not unfavorable to concentration.

Pleasure *in posse*—probable pleasure—is an inferior motive to actual pleasure. If there is a strong probability of pleasure to be soon experienced, the will may be exercised to a considerable degree, but if the prospect of pleasure is far distant the influence is generally slight.

Pain, instead of attracting, repels us. How then does it act as a motive? When pain ensues on neglect of or departure from the prescribed task, we find pleasure by sticking to it. On this principle we punish our pupils for want of application. Pain, as a motive, is inferior to pleasure, and should only be employed when other motives will not operate. Pain in any degree is a waste of brain power, and when it passes into dread or terror a great evil is inflicted. The teacher who is for ever scolding and pestering his pupils has much to answer for. To demand some difficult task of a timid child, and, at the same time to frighten it with a threatened penalty, is to demand an impossibility, and the teacher has made it an impossibility. To set a task with the penalty of corporal punishment in case of failure attached, is, first, to incapacitate the child, and next, to punish the child because you have succeeded in incapacitating it. Perhaps the use of the tawse might be justified under such circumstances, but certainly not if applied to the child.

There are cases, however, in which the teacher must resort to pain. We sometimes find that a pupil considers he has mastered a subject, when the fact is, he has only a very elementary knowledge of it. What must the teacher then do but take some of the conceit out of him—always a painful operation to submit to. The pupil must be puzzled that his eyes may be opened to his ignorance. But the end should be such as to justify the means. We should resort to heroic remedies only when milder ones will not meet the case.

When all the mental powers are for a time absorbed on an object or exercise, an expenditure of brain energy is taking place, and, after a time, there must be an intermission. The maximum of mental energy cannot be long maintained. In view of this fact, is it a wise provision of our school law, which makes the time of teaching between five and six hours a day? I think that for young pupils, at any rate, the time is too long. The younger pupils in our public schools do no more work than, perhaps not as much as, they could do in half the time, with frequent intermissions of work and play. The young mind is incapable of continuous concentrated application for an hour and a half at a stretch, and it is folly to pretend to exact it. Let any teacher observe how little of their time the minds of his pupils are wholly absorbed in their tasks, and how much of it, so far as acquisition is concerned, is practically wasted; and I believe he will become an adherent of the view here expressed. Unsettled, desultory work is not very productive, and we are sure to have a good deal of such work so long as our working hours remain as at present.

Relief may be given to the mind by a judicious alternation of studies. No study is so many-sided as to make equal demands on all our energies. It is a relief to pass from exercises which are entirely new and strange, to others already familiar, but, which require additional practice, in order to engrain them on the memory. Transition from the abstract to the concrete also affords relief. The whole attitude of the mind is different when engaged on arithmetical problems from its attitude when engaged in a reading or writing exercise. The change from language to a constructive exercise, such as drawing, would be an effective one for rest.

It has been already stated that pleasure in the work is the chief attracting motive to concentration. How then can the teacher get his pupils to love their work? In the first place, the teacher must love the work himself; this implies a thorough mastery of the work. Enthusiasm begets enthusiasm; if the teacher be thoroughly earnest and enthusiastic, provided always that he possesses tact and good judgment, his pupils will not long remain uninterested. The teacher can also create an interest on the part of his pupils by telling them enough to awaken their curiosity. When the wonder of a child is aroused good results are likely to follow: the object of his curiosity will probably be examined.

Again the teacher must not give too much, and must not go too fast—must never give an overdose and must give time to digest.

Further, the teacher may lay before the child certain facts pointing to a conclusion, and allow the child to draw the conclusion. The pupil by doing this himself, instead of having it done for him, gains a sense of his own power—always a pleasurable feeling. In this way, too, personal independence is fostered.

Judicious praise on the part of the teacher may give encouragement and may stimulate to further exertion; but the teacher must be judicious in his bestowal. He must guard against ministering to the child's vanity, as well as against arousing the jealousy of his class-mates.

SOCIABILITY.*

One of the conditions of our happiness, almost of our existence, in this world is congenial society. No more dreadful punishment has ever been inflicted upon criminals than solitary confinement. No man, however wicked or hardened he may be, can long bear to be shut out from the sound of the human voice, the touch of the human hand or the sight of the human face. Experience has taught many a prisoner that the harshest tones, the most forbidding countenance and even blows or stripes are preferable to complete, enforced solitude.

There have been in former days, and in rare instances there are still, some who have voluntarily renounced the society of their fellows and devoted themselves to communion with Nature and Nature's Author. To them the flowers and the trees, the birds and beasts, the waving corn and the scented hay, the freshness and life of early morning, and the dewy stillness of the evening, the howling tempest and the cooling breeze supplied the place of the love and companionship of wife, brother, sister and friend. They were therefore free to devote themselves to study, to meditation and to devotion.

At first thought one would imagine that circumstances would be singularly favourable to these recluses, that being freed from the toils and cares, the annoyances and interruptions as well as the temptations and passions of active life they would accomplish much work and obtain such communion with the unseen as is denied to those whose ears are always filled with the jarring noises of a troubled world. And yet we do not read that these hermits were among the great benefactors of our race. They, no doubt, had their work to do, and they did it faithfully and self-denyingly. But it was not the *greatest* work. They were rather copiers or preservers of what had been done by others than creators themselves.

All the great teachers of mankind have been those who shared in the struggles, the cares, the joys and sorrows of those of their generation. Many a time it has seemed to them that the stress and turmoil and trouble around and within them had robbed them of their inspiration, but made the stronger by that very discipline they have returned to their work with new vigor and have succeeded the better for the struggle.

Do you want instances? Take that of Him who sitting on the Mount of Olives, sharing the labors of the fisherman of Galilee, surrounded by the hungry multitude in the desert, in the temple,

* Abridged from a paper read before the Charlottetown Teachers' Institute by Miss Maria Lawson.

on the streets, at the cottage of the sisters, at the supper table of the Pharisee, wherever in short he could get a human ear to listen to him, or a human heart to sympathize with him, taught those lessons which it takes the world so long to learn but which it is infinitely better for having even attempted to learn. He shrank from no pain, refused to share no sorrow, held himself aloof from no society, despised no pleasure which would enable him better to understand, nay, to make his own, the very "thoughts and intents" of the hearts of those whom he came to teach and to save.

It was in busy London amid the conflicts and the controversies of a civil war that Milton derived the inspiration of Paradise Lost and it was after having endured the greatest of bodily afflictions that he, assisted and comforted by his daughters, brought his great work to a successful conclusion. Shakespeare, our greatest English teacher, did his work in the midst of the intrigues, the ambitions, the heartburnings and revelries of the court, or surrounded by the laughter and bustle of a playhouse. Who will say that the poems of Wordsworth, Burns, or Goldsmith, are any the less sweet for having been admired by wife or friends, or that the works of the sage of Chelsea are the less wise and noble because he was cheered by the ministrations of one of the best of women. Dickens, Scott, or George Eliot could never have taught as they did, if, with genial hearts and large sympathies, they had not been able first to know themselves and then to picture to others the lives of those, some of them very homely, and, but for the light thrown around them by their genius, very unattractive, with which their lovef their fellows brought them in contact.

All the great reforms have been brought about by men or women who have first mingled with those who suffered from the abuses and by the wondrous power of sympathy shared their sufferings and then with all the zeal and earnestness of their nature forced those with whom they came in contact to share that sympathy and to so feel the evils they complained of that they would no longer suffer them to exist. But such work requires very strong and deep sympathy. It is in no shallow nature that the germ must be planted which is to spring up and grow into a great tree laden with blessings for mankind. He who would rouse the majority of men from the lethargic sleep of selfishness must moreover be able intuitively to discern in what way he can best bring them into sympathy with the sufferers whom he desires to benefit. In one word he must be sociable. Without this quality even the patient perseverance of a Wilberforce would not have accomplished its end or the zeal of a Howard aroused the sympathies of England for the sufferings of the perhaps most unattractive class of human beings. Our greatest inventors and scientists have most of them been men who have taken part in the active duties of life and who have communicated to their associates such of the great truths they had discovered as they were able to comprehend. Those of them who have devoted themselves entirely to the pursuit of their object to the exclusion of human love and companionship have paid the penalty in many instances by the ruin of the brain they had overtaxed.

If then society be necessary for the great ones of the world how much more is it needed by those of less exalted aims and of more modest abilities. If they with their lofty aims and absorbing interests find it impossible to live alone how much less can we who are of more common mould do without sympathy and companionship. We lose much of the sweetness of life by wrapping ourselves up in a cloak of reserve.

A SCHOLAR.

"Yes, I am five years old to-day!
Last week I put my dolls away;
For it was time, I'm sure you'll say,
For one so old to go
To school, and learn to read and spell;—
And I am doing *very* well;—
Perhaps you'd like to hear me tell
How many things I know.

"Well, if you'll only take a look—
Yes, this is it—the last I took,
Here in my pretty picture-book,
Just near the purple cover;—
Now listen—Here are one, two, three
Wee little letters, don't you see?—
Their names are D and O and G;
They spell—now guess!—*Old Rover!*"

—*Sydney Dayre in St. Nicholas*

Examination Questions.

UNIVERSITY OF TORONTO.

JUNIOR MATRICULATION, 1882.

ENGLISH.

ARTS: PASS.

MEDICINE: PASS AND HONORS.

Examiner.—EDWARD B. BROWN, B. A.

*** Questions 12, 13, and 14 are for Candidates for Honors in Medicine only. Questions 8, 9, 10, and 11, are for Candidates in Arts only.

1. Write a short essay on any one of the following subjects:
   (*a*) The school system of Ontario.
   (*b*) Æstheticism.
   (*c*) Lord Macaulay.
   (*d*) Post equitem sedat atra cura.
2. Point out all grammatical errors and faults of style in the following sentences:
   (*a*) The Dean quit active work about a year ago.
   (*b*) Mr. * * * * 's medical attendant telegraphed that his patient had been removed, and was quite smart.
   (*c*) The author probably don't mean to say that the facts are clearly proven.
   (*d*) A most enjoyable time was spent by those present.
   (*e*) When he was young he travelled some, and thus gained considerable in experience.
   (*f*) When you were out, sir, a party called who said his name was Johnson.
   (*g*) I do not know as I can go with you to-morrow, but I should like to.
3. "His furniture consisted of a bed, a chair, a bureau, a trunk, and numerous pegs with coats and *pants* and *vests*,—as he was in the habit of calling waistcoats and pantaloons or trousers—hanging up as if the owner had melted out of them."—DR. HOLMES, *The Professor.*

   "The word *pants* is the proper correlative of the word *gent*—the latter invariably wears the former."—MR. RICHARD GRANT WHITE.

   Why is the use of the words *pants*, *vest*, and *gent*, considered a vulgarism?
4. Give rules for the use of *shall* and *will*.
5. Classify and give examples of the English Diminutives.
6. Derive the English names of the days of the week.
7. What is grammar?
8. What are the chief literary merits and defects of Goldsmith and Cowper?
9. State and discuss the *trade theory* which is developed by the poet in *The Deserted Village.*
10. Quote the description of the village preacher from *The Deserted Village.*
11. Piety has found
    Friends in the friends of science, and true prayer
    Has flowed from lips wet with Castalian dews.
    Such was thy wisdom, Newton, childlike sage!
    Sagacious reader of the works of God,
    And in his word sagacious. Such too thine,
    Milton, whose genius had angelic wings,
    And fed on manna. And such thine, in whom
    Our British Themis gloried with just cause.
    Immortal Hale! for deep discernment praised,
    And sound integrity, not more than famed
    For sanctity, of manners undefiled.
    All flesh is grass, and all its glory fades
    Like the fair flower dishevelled in the wind;
    Riches have wings, and grandeur is a dream,
    The man we celebrate must find a tomb,
    And we that worship him, ignoble graves.

    The Task, Bk. III., vv. 249-265.

   (*a*) Explain the allusions in: *Castalian dews; All flesh is grass; Riches have wings.*
   (*b*) Write notes on Newton, Milton, Hale, Themis.
   (*c*) *Piety; celebrate.* Derive those words, and illustrate the various senses in which each may be used.

(*d*) Analyze the sentence "And such thine....undefiled," and parse; such; thine; Hale; praised; integrity; famed; undefiled.

(*e*) Point out all rhetorical figures in the extract.

12. Give examples of illusive etymologies in the English language.

13. Define and give examples of the different rhetorical figures of repetition.

14. Analyze the sentence, and parse the words given in 11 (*d*) above.

ENGLISH.

ARTS: HONORS.

Examiner.—D. R. KEYS, B.A.

1. What is known of the life of Shakespeare?

2. Show to what extent the historical drama had been cultivated prior to Shakespeare. Name the most distinguished modern dramatists who have handled modern subjects, giving the titles of their plays.

3. Shakespeare's histories have been divided into two classes, one dealing with strong, the other with weak kings. Give a list of the plays, classifying them on this basis.

4. "The one dominant subject of the histories is, how a man may fail, and how a man may succeed in attaining a practical mastery of the world."

Develop this idea with special reference to the play of Richard II.

5. Compare the plays of Richard II and Henry IV., with regard to the humorous element, and explain, as far as you can, the difference between them.

6. Richard II. has been called an "æsthete." State your opinion on this subject, and support it by passages from the play.

7. Contrast the characters of Richard II. and Bolingbroke.

8. Quote Gaunt's speech in praise of England, and mention any other passages in which Shakespeare exalts his country.

9. Give the substance of the charges preferred against each other by Hereford and Norfolk. What was the date of the trial by combat?

HISTORY AND GEOGRAPHY.

ARTS: PASS.

Examiner.—D. R. KEYS, B. A.

1. Give an account of the administrations of Robert Walpole, and the elder Pitt, contrasting the private characters of the two men, and showing the influence of each on the history of England.

2. Give a detailed account of the American Revolution, making particular reference to the measures which drove the colonists to revolt.

3. Write a short history of the reign of Augustus, noticing the constitutional changes, and dwelling on the features which made his age a literary era.

4. Sketch the internal and external condition of Rome at the close of the Third Punic War.

5. Contrast Athens and Sparta as to their form of government, their literary and their political influence at the time of the Peloponnesian war.

6. Tell all you know of the life, character, and influence of Socrates.

7. Give a general description of the mountain system of Greece.

8. Locate, as accurately as you can, and give the modern names of: Ilva, the Aufidus, the Benacus, Ticinum, Panormus, Euripus, Baiæ, Naupactus, Eurotus, Ambracius Sinus.

9. Draw a map of any *one* of the following countries, showing the principal physical features and cities:—Spain, Austria, Mexico.

10. Describe a journey by rail from Toronto to San Francisco, naming the railroad lines, with the states and cities through which one would pass.

HISTORY AND GEOGRAPHY.

ARTS: HONORS.

Examiner.—EDWARD B. BROWN, B.A.

1. Explain the titles of Henry VII. and James I. to the Crown of England. What is meant by a "parliamentary title" to the Crown?

2. Sketch the history of Parliamentary Government during the reigns of the Tudors and the Stuarts.

3. Narrate briefly the history of England from 1642 to 1649.

4. Indicate the causes and results of the Revolution of 1688.

5. Give a brief account of the literature, politics, and manners of the reign of Queen Anne.

6. Draw a map of the western peninsula of Ontario, showing the principal physical features, the counties and chief towns.

7. Give an accurate description of the different Lake districts of the British Isles.

8. Name and describe the British possessions in Asia.

HISTORY AND GEOGRAPHY.

MEDICINE: PASS AND HONORS.

Examiner.—D. R. KEYS, B.A.

*** Questions 7, 8, 9, and 10, are for Candidates in Honors only.

1. Write short notes on the Witena-gemot, Magna Charta, and the Cabinet, and explain the present system of government in England.

2. Give a description of the different civil wars in which England has been engaged.

3. (*a*) Sketch the characters of Henry VIII., Charles II., and George III.

(*b*) Trace the descent of the Crown of England from Henry VIII. to George I.

4. Draw a map of any one of the following countries, showing the principal physical features and cities: Spain, Austria, Mexico.

5. Describe a journey by rail from Toronto to San Francisco, naming the railway lines, with the states and cities through which one would pass.

6. Mention and describe the situation, scenery, and surroundings of the principal lakes of Europe.

7. Give an account of the administrations of Robert Walpole, and the elder Pitt, contrasting the private characters of the two men, and showing the influence of each on the history of England.

8. Give a detailed account of the American Revolution, making particular reference to the measures which drove the colonists to revolt.

9. Name and describe the volcanoes of Europe and America.

10. Trace accurately the course of the following rivers: Mississippi, Severn (England), Restigouche, Hudson, Po, Red River, Ebro, Volga.

CHEMISTRY.

MEDICINE: HONORS.

Examiner.—W. H. ELLIS, M.A., M.B.

1. Give an account of the compounds of hydrogen with chlorine, sulphur, nitrogen, and silicon.

2. Define the terms "acid," "alkali," "base," "salt." Give examples of each.

3. How many grains of nitre are required to yield one kilogram of nitric acid?

4. Express by an equation the reaction that occurs where sulphuric acid is heated with copper.

5. Describe an experiment to shew the composition of carbon dioxide.

6. How many litres of carbon dioxide at $0^{o}C$ and 760^{mm} Bar. may be obtained by dissolving one kilogram of marble in hydrochloric acid?

H = 1, O = 16, N = 14, Ca = 40, C = 12, Cl = 35·5.

INTERMEDIATE EXAMINATION 1882.

ENGLISH GRAMMAR.

TIME—THREE HOURS.

1. "And, truly, he who here
Hath run his bright career,
And serv'd men nobly, and acceptance found,
And borne to light and right his witness high
What can he better crave than then to die,
And wait the issue, sleeping underground?
Why should he pray to range
Down the long age of truth that ripens slow,
And break his heart with all the baffling change
And all the tedious tossing to and fro?

For this and that way swings
The flux of mortal things,

Though moving inly to one far-off goal.
—What had our Arthur gain'd, to stop and see,
After light's term, a term of cecity,
A Church once large and then grown strait in soul?"
—MATTHEW ARNOLD, *on the Death of Dean Stanley.*

(*a*) Analyze lines 11 to 16.

(*b*) Write the same lines in your own words, so as to show that you fully understand the passage. (Note to the Sub-Examiner—The second value is for the literary form of the answer.)

(*c*) Parse *to die* (l. 5), *underground* (6), *break* (9), *this and that way* (11), *stop* (14).

(*d*) Explain the meaning, and give the etymology of *flux* (l. 12), *inly* (13), *cecity* (15), *strait* (16); and also explain *light's term* (15).

2. Correct any errors in the following sentences, giving your reasons for each correction:—

(*i.*) "The time of Defoe was the age of Queen Anne, King William and his descendants."

(*ii.*) "Cowper had the power to knit the thong of satire, it sometimes seems, in quite equal strength to Pope. Take him all in all, we prefer him far before Pope."

(*iii.*) The myrtles and ivy of sweet two-and-twenty
Are worth all your laurels, though ever so plenty.

(*iv.*) The isles of Greece, the isles of Greece,
Where burning Sappho loved and sung,
Where grew the arts of war and peace,
Where Phœbus rose and Delos sprung.

(*v.*) No event is too extraordinary to be impossible.

(*vi.*) "'T was in Trafalgar's bay
We saw the Frenchman lay."

(*vii.*) A butcher bought two cows from two men who offered them for sale. The butcher had immediately slaughtered one of the animals and took both the hide and the carcase to the city. On the same day the owner traced it to the butcher's possession.

(*viii.*) "An indissoluble tie had been formed between them, and were it not for a return of his malady, their meditated marriage would, in all probability, have taken place."

(*ix.*) "When we consider what care she had taken of the poet, it is not unpardonable on her part to have shown some feelings of jealousy."

(*x.*) "The man was thought to be dead, but after pumping the water out of his stomach he began to show signs of returning consciousness."

(*xi.*) "A most interesting feature will be the submission of a pledge to support prohibition to the candidates. If the candidates refuse to recognize the prohibitionists they are determined to place a third man in the field on that issue."

(*xii.*) "If not more than 30,000 settlers will go in this year, there are already in the country more than enough non-producers."

(*xiii.*) "You have no idea how that this place is changed It is pretty near built over now."

(*xiv.*) "The ball and concert season have now commenced. The Prince is very popular, and he appears to be liked every place he goes."

(*xv.*) "This is the man whom I heard was ill."
"You was saying that neither I nor you are well."

3. Explain and give the origin of the phrases—*verb. sap.*; *infra dig.*; *bizarre*; *boycott*; *solecism.*

4. Spell phonetically—*nonchalant*, *ennui*, *bronchitis*, *penchant éclat*, *depot.*

5. Distinguish between *counsel* and *council*; *practise* and *practice*; *perfume* and *perfume*; *compliment* and *complement.*

6. Accentuate—*illustrate*, *farrago*, *homœopathist*, *photographer.*

7. Give the rules for the use of shall and will, illustrating by examples.

8. Give the full etymology of the following words:—beef, chair, farrow, admiral, praise, due, dish, priest, fishmonger, companion.

9. Give fifteen English derivatives from *facio.*

10. Name three of the commonest faults in composition, giving examples of each.

Values:—1, *a*, 18; *b*, 10+5=15; *c*, 10; *d*, 9; 2, *i*, 4; *ii*, 2; *iii*, 2; *iv*, 4; *v*, 4; *vi*, 2; *vii*, 4; *viii*, 4; *ix*, 4; *x*, 4; *xi*, 4; *xii*, 2; *xiii*, 4; *xiv*, 4; *xv*, 2+2; 3, 10; 4, 6; 5, 8; 6, 4; 7, 14; 8, 10; 9, 15, 10, 9.

ENGLISH LITERATURE.

TIME TWO HOURS AND A QUARTER.

In the values, M. is for the matter of the answer; F. for its literary form.

I.—GOLDSMITH'S DESERTED VILLAGE.

1. "Sweet Auburn! parent of the blissful hour.
Thy glades forlorn confess the tyrant's power.
Here, as I take my solitary rounds,
Amidst thy tangling walks, and ruined grounds,
And, many a year elaps'd, return to view
Where once the cottage stood, the hawthorn grew
Remembrance wakes with all her busy train,
Swells at my breast, and turns the past to pain."

(*a*) Specify the words not of English origin in this extract, distinguish those of direct Latin origin from those derived thence indirectly through the French by the letters L. and LF. respectively.

(*b*) Analyze the passage from "Here" to "train."

(*c*) Explain the meaning of the following phrases:—*parent of the blissful hour*; *confess the tyrant's power*, *swells at my breast.*

2. Quote the description of the village preacher, beginning with the line—

"Thus to relieve the wretched was his pride."

3. Give a brief outline of Goldsmith's career, mentioning his chief poetical and dramatic works.

4. "Downward they move, a melancholy band,
Pass from the shore, and darken all the strand."
Explain the meaning of the *last line.*

II.—COWPER'S TASK—BK. III.

1. "Me, therefore, studious of laborious ease, 361
Not slothful; happy to deceive the time,
Not waste it; and aware that human life
Is but a loan to be repaid with use,
When He shall call his debtors to account, 365
From whom are all our blessings; bus'ness finds
Ev'n here: while sedulous I seek to improve,
At least neglect not, or leave unemploy'd
The mind He gave me; driving it, though slack
Too oft, and much impeded in its work 370
By causes not to be divulg'd in vain,
To its just point—the service of mankind."

(*a*) Write out the whole passage in prose, so as to show that you fully appreciate its meaning.

(*b*) Parse: *Me*, *studious* (l. 361); *waste*, (363); *to be repaid* (364); *sedulous* (367); *neglect* (368); *slack* (369).

(*c*) What is peculiar in the use of the words "studious" (l. 361), and "sedulous" (l. 367), in respect of either sense or construction, and what influence is traceable in this use?

(*d*) Explain the allusion in l. 365; also in the words "though slack—in vain" (369-71).

(*e*) One edition has a comma at the end of l. 369. Show how this would alter and destroy the sense.

(*f*) Derive *sedulous*, *divulge.*

2. Explain the italicised phrases in the following passages:—

(*i.*) What chance that I . . . .
Should speak to purpose, or with better hope
Crack the satiric thong?

(*ii*) . . . . . True pray'r
Has flow'd from lips *wet with Castalian dews.*

(*iii.*) His warm but simple home, where he enjoys
With her who shares his pleasures and his heart.
Sweet converse, sipping calm the *fragrant lymph*
Which neatly she prepares.

(*iv.*) Yet *gnats* have had, and *frogs and mice* long since,
Their eulogy; those sang the *Mantuan bard*,
And these *the Grecian* in ennobling strains.
And in thy numbers, Phillips, shines for aye
The solitary *Shilling.*

(*v.*) *Crape and cock'd pistol* and the whistling ball
Sent through the traveller's *temples.*

3. Account for the title of the poem.

4. Describe the condition of literature at the time of Cowper's appearance as a poet, and estimate the effect produced by his poetry.

III.—ADDISON'S SIR ROGER DE COVERLEY.

1. My worthy friend Sir Roger, when we were talking of the malice of parties, very frequently tells us of an accident that happened to him when he was a school-boy, *which* was at the time when

the feuds ran high between the Roundheads and Cavaliers. This worthy knight, being then but a stripling, had occasion to inquire *which* was the way to St. Anne's Lane upon *which* the person *whom* he spoke to, instead of answering his question, called him a young popish cur, and asked him who had made Anne a *saint*. The boy, being in some confusion, inquired of the next he met which was the way to Anne's Lane, but was called a prick-eared cur for his pains, and instead of *being shewn the way*, was told that she had been a saint before he was born, and would be one after he was hanged.

(*a*) Parse the words italicised.

(*b*) *Roundheads; Cavaliers; prick-eared.* Explain the origin and meaning of these terms.

(*c*) Give some account of the state of political parties in Addison's time, and of the part he took in them.

2. Write explanatory notes on the words italicised in the following passages:—

(*i.*) A *setting dog* that he has *made* himself.

(*ii.*) He *wishes* Sir Roger does not harbour a Jesuit.

(*iii.*) I suppose this letter will find thee *picking of daisies*, or *smelling to a lock of hay*.

(*iv.*) *Sir Andrew* has grown the cock of the club . . . . . and will make every mother's son of us *commonwealth's men*.

(*v.*) I *was* no sooner come into *Gray's Inn* Walks *but* I heard my friend.

3. Give some account of the clubs and coffee-houses of Addison's time, and show how the former differ from those of the present day.

4. Who were the *Mohocks* mentioned in the *Spectator*?

5. Sketch the character of Will Wimble.

Values:—I. 1, *a*, M. 7; *b*, F. 1, M. 3; *c*, F. 1, M. 2; 2, F. 2, M. 5; 3, M. 2; 4, M. 2. II. 1, *a*, F. 2, M. 4; *b*, M. 4; *c*, M. 2; *d*, M. 1; *e*, M. 1; *f*, M. 2; 2, *i*, M. 1; *ii*, M. 1; *iii*, M. 2; *iv*, M. 3; *v*, M. 1; 3, M. 1; 4, F. 3, M. 3. III. 1, *a*, M. 3; *b*, F. 1, M. 3; *c*, F. 1, M. 3; 2, *i*, M. 2; *ii*. M. 1; *iii*, M. 2; *iv*, M. 2; *v*, M. 3; 3, F. 1, M. 6; 4, M. 2; 5, F. 1, M. 3.

COMPOSITION.

TIME—ONE HOUR AND A HALF.

I.

Write out the sense of the following passage in good prose.

To a true king I offered free from stain
Courage and faith; vain faith, and courage vain.
For him, I threw lands, honours, wealth, away,
And one dear hope, that was more prized than they.
For him I languished in a foreign clime,
Gray-haired with sorrow in my manhood's prime;
Heard on Lavernia Scargill's whispering trees,
And pined by Arno for my lovelier Tees;
Beheld each night my home in fevered sleep,
Each morning started from the dream to weep;
Till God, who saw me tried too sorely, gave
The resting place I asked, an early grave.
Oh thou, whom chance leads to this nameless stone,
From that proud country which was once my own,
By those white cliffs I never more must see,
By that dear language which I spake like thee,
Forget all feuds, and shed one English tear
O'er English dust. A broken heart lies here.

—*Macaulay.*

II.

(*a*) Sketch the line of argument in the "Deserted Village," or

(*b*) Write a short essay on one of the following subjects:

(i.) The relative advantage of life in the country and in large cities.

(ii.) How far do intellectual and moral excellence go hand-in-hand? Illustrate by historical examples.

DICTATION.

TIME—THIRTY MINUTES.

Note for the Presiding Examiner.—This paper must not be seen by the Candidates. It is to be read to them *three times—first*, at the ordinary rate of reading, the Candidates simply paying attention; *secondly*, slowly, the candidates writing; *thirdly*, for revise.

The farmer imagines power and place are fine things. But the President has paid dear for his White House. It has commonly cost him all his peace and the best of his manly attributes. To preserve for a short time so conspicuous an appearance before the world, he is content to eat dust before the real masters who stand erect behind the throne. Or, do men desire the more substantial and permanent grandeur of genius? Neither has this an immunity. He who by force of will or of thought is great, and overlooks thousands, has the charges of that eminence. With every influx of light, comes new danger. Has he light? He must bear witness to the light, and always outrun that sympathy which gives him such keen satisfaction, by his fidelity to new revelations of the incessant soul. He must hate father and mother, wife and child. Has he all that the world loves and admires and covets? He must cast behind him their admiration, and afflict them by faithfulness to his truth, and become a by-word and a hissing.

This Law writes the laws of cities and nations. It is in vain to build or plot or combine against it. Things refuse to be mis-managed long. Though no checks to a new evil appear, the checks exist and will appear. If the government is cruel, the governor's life is not safe. If you tax too high, the revenue will yield nothing. If you make the criminal code sanguinary, juries will not convict. If the law is too mild, private vengeance comes in. If the government is a terrific democracy, the pressure is resisted by an overcharge of energy in the citizen, and life glows with a fiercer flame. Nothing arbitrary, nothing artificial can endure. The true life and satisfactions of man seem to elude the utmost rigours or felicities of condition, and to establish themselves with great indifferency under all varieties of circumstance. Under all governments the influence of character remains the same,—in Turkey and in New England about alike. Under the primeval despots of Egypt, history honestly confesses that man must have been as free as culture could make him.

HISTORY.

TIME—TWO HOURS AND A HALF.

1. Sketch the gradual extension of the Roman Empire from the termination of the Second Punic War to the death of Julius Cæsar.

2. Give a brief outline of the Roman method of Provincial Government.

3. State clearly what were the political abuses which the Gracchi attempted to reform, and in how far they were successful.

4. Relate briefly the history of the struggle of the barons with King John and his successor, and specify the principal provisions of Magna Charta.

5. Show why the loss of England's possessions in France was beneficial to the English people.

6. Sketch the policy of Wolsey and Thomas Cromwell, and the growth of despotic power under the Tudors.

7. Describe the condition of Canada during the administration of Champlain, and give a sketch of that governor's voyages and explorations.

8. Give an account of the first founding (under French rule) of Quebec, Montreal, Kingston and Toronto, with dates, and names of founders.

9. What were the terms of the Union between Upper and Lower Canada in 1841, and on what were they based?

Values:—1, 14; 2, 6; 3, 14; 4, 10+6=16; 5, 6; 6, 4+4+8=16; 7+5=12; 8, 4; 9, 12.

GEOGRAPHY.

TIME—TWO HOURS.

1. (i.) Name in order, beginning in the north and ending Mexico, the provinces of the Dominion and the States of the American Union on the eastern side of North America that possess one or more seaports; (ii.) Name an unimportant seaport in each; (iii.) state the chief export or exports from each such seaport; and (iv.), if it is situated at the mouth of, or upon a large river, name that river.

2. (i.) Contrast the physical characteristics of Northern and Southern Europe; (ii.) Arrange the governments of the different European states under the following heads:—Republics, Limited Monarchies, Absolute Monarchies.

3. (i.) Draw an outline map of Hindostan; (ii.) mark on it the names and courses of three important rivers, and the names and positions of the chief mountain ranges and of four large cities.

4. (i.) Name five African lakes; and (ii.) state with regard to each whether it is north of, south of, or on the equator.

5. Explain why, though Canada is nearer the sun in January than in July, the weather is warmer in the latter month.

Values:—1, 40; 2, 20; 3, 20; 4, 10; 5, 10.

BOOK-KEEPING.

TIME – ONE HOUR AND A QUARTER.

1. Explain the terms Folio, Cash, Trial Balance, Postings, Bills Receivable, Sundries, Consignment.

2. Write out the general forms of a Promissory Note, a Draft, and a Bill of Exchange.

3. Define the terms, Profit and Loss, Stock, Exercise, Bill of Entry, Drawback, Dividend.

4. What is the general rule of Debiting and Crediting?

5. Journalize the following:—

(*a*) I receive a legacy of $1000

(*b*) Borrowed $500, for which I give my note due three months hence.

(*c*) Took a promissory note in payment of a debt of $100; discounted same; net proceeds $97.

(*d*) Sold Mdse. amounting to $1000, for which I received $500 Cash, Cheque on Bank of Montreal for $200, Note at 60 days for balance.

(*e*) Commenced business with a capital of $2000 cash, in Bills Receivable, $2000 borrowed from A. B.

Values:—1, 14; 2, 15; 3, 18; 4, 4; 5, 24.

CHEMISTRY.

TIME—ONE HOUR AND A HALF.

1. A specimen of water was divided into two parts. One part was then boiled for some time. To this and the unboiled portion contained in separate bottles, a small quantity of finely powdered chalk was added. Upon agitation it was found that the boiled portion had become milky, the unboiled portion remained clear, the chalk having dissolved. Explain the cause of this difference.

2. How much sulphur dioxide, by weight, can be obtained by burning 25 grains of sulphur in sufficient oxygen?

3. Which of the following gases should be collected by *upward* and which by *downward* displacement: Chlorine, Carbon Dioxide, Hydrogen, Sulphur Dioxide, Ammonia?

4. A quantity of alcohol, contained in an evaporating dish, was ignited and the burning liquid poured through wire gauze held over a beaker. The flame was by this process confined to the upper surface of the wire gauze, and the greater part of the alcohol collected unignited in the beaker. State the principle upon which the success of this experiment depends.

5. Assign reasons for assuming that the atmosphere is not a chemical compound but a mechanical mixture of oxygen and nitrogen.

6. Describe the physical changes which sulphur undergoes in being heated to 440°C.

7. Write out the equation representing the reaction taking place in the preparation of nitrogen dioxide, and represent by diagram the necessary apparatus for its elimination and collection.

8. A piece of paper saturated with spirits of turpentine when plunged into a jar containing dry chlorine ignites. Explain.

9. (i.) Write out the equation representing the reaction in preparing carbon dioxide from calcium carbonate and hydrochloric acid.

(ii.) How much, by weight, of calcium carbonate is required to furnish 12 litres of carbon dioxide, measured at 0°C and 760^{mm}. P.?

Values:—1, 12; 2, 10; 3, 10, 5×2; 4, 10; 5, 12; 6, 8; 7, 15, 5+10; 8, 8; 9, 15, 5+10.

EUCLID.

TIME—TWO HOURS AND A HALF.

(*Usual abbreviations permitted.*)

1. A parallelogram is a rectilineal figure whose opposite sides are parallel and whose opposite angles are equal.

Show clearly what is deficient and what redundant in this definition.

2. The three angles of a triangle are together equal to two right angles.

Prove this; and by its means show how to divide a right angle into three equal parts.

3. Triangles upon the same base and between the same parallels are equal to one another. Prove this; and thence show how to change an irregular four-sided figure into an equal triangle.

4. Given three straight lines, show how to construct a triangle having three lines for sides. Can it always be done? Explain fully.

5. If a straight line be bisected and also cut into two unequal parts, give the relations existing amongst the segments as expressed in two propositions of the Second Book of Euclid, and proves one of these propositions.

6. Do *one only* of the following:

(*a*) If A, B, C be the angular points of a triangle, find an expression for the perpendicular from A upon the side BC, in terms of the sides.

(*b*) If from any point in the circumference of a circle two lines are drawn to the extremities of a diameter, the sum of the squares upon these lines is constant; and the angle contained by these lines is a right angle. [No reference to Euc. Bk. III.]

7. What proposition of the Second Book would be formed from Euc. II., 12, by bringing the vertex A down to the point D in the side BC produced?

Values 1, 10; 2, 13; 3, 18; 4, 14; 5, 16; 6, *a* 12, *b* 12; 7, 12.

PUBLIC SCHOOL TEACHERS—1882.

FIRST CLASS TEACHERS—GRADES A AND B.

ANCIENT HISTORY AND GEOGRAPHY.

TIME—TWO HOURS AND A HALF.

1. Give an account of the second invasion of Greece by the Persians.

2. Sketch briefly the Constitution of Athens in the time of Pericles.

3. State, in chronological order, with dates, the conquests of Rome from B.C. 202 to B.C. 133.

4. Describe the character and career of Caius Gracchus, or of Lucius Sulla.

5. Describe briefly the political circumstances which led to the banishment and recall of Cicero.

6. Locate the following places. Ravenna, Brundisium, Pharsalia, Cannae, Pydna, Potidaia, Actium, Munda, Saguntum, Philippi, Ægos Potamos, Sphakteria, Minturnae, Skandeia.

ENGLISH AND CANADIAN HISTORY.

TIME—TWO HOURS AND A HALF.

1. Reproduce Green's sketch of the character and career of Thomas Cromwell.

2. Describe, after Macaulay, the state of England at the accession of James II.

3. Sketch, after Hallam, the history of the English constitution during the reign of William III.

4. Explain the nature of the feudal system established in Canada by the French.

5. Write brief historical notes on Laval, the English standing army, and the High Commission Court.

ENGLISH LANGUAGE AND HISTORY OF ENGLISH LITERATURE.

TIME—TWO HOURS AND A HALF.

1. State briefly the changes caused by the Norman Conquest (1) in the Grammar, (2) in the vocabulary of English. Illustrate by examples what has been termed the bilingualism of English.

2. Give the derivation and history of the following words: jeopardy, villain, esquire, chattels, strange, mercy, priest, scourge, tantalize, tribulation, utopian, hybrid.

3. State the chief peculiarities of poetic diction as distinguished from prose diction.

4. Describe the distinctive features of the English Sonnet in regard to (1) treatment of subject, (2) metre.

5. Name the principal prose writers of the reign of Elizabeth with their works, and write a short criticism of the Ecclesiastical Polity of Hooker.

6. Criticise the statement "that Shakspeare deviated from the dramatic unities of time, place and action, laid down by the ancients:" state how far such deviation is both allowable and necessary. *Illustrate your answer by reference to any of the plays of Shakespeare.*

7. Write a short account of the Vision of Piers the Ploughman.

MILTON, POPE, AND JOHNSON.

TIME - TWO HOURS AND A HALF.

"A man may be a heretick in the truth; and if he beleeve things only because his Pastor sayes so, or the Assembly so determins, without knowing other reason, though his belief be true, yet the very truth he holds becomes his heresie. There is not any burden that som would gladier post off to another then the charge and care of their Religion. There be, who knows not that there be, of Protestants and professors who live and dye in as arrant an implicit faith as any lay Papist of Loretto. A wealthy man addicted to his pleasure and to his profits finds Religion to be a traffick so entangl'd and of so many piddling accounts, that of all mysteries he cannot skill to keep a stock going upon that trade. What should he doe? Fain he would have the name to be religious, fain he would bear up with his neighbours in that. What does he therefore but resolvs to give over toyling, and to find himself out som factor, to whose care and credit he may commit the whole managing of his religious affairs, som Divine of note and estimation that must be."

Areopagitica, pp. 38 and 39, Hale's edition.

(*i.*) Explain the meaning of the first clause of the first sentence, of 'professors,' 'arrant,' 'implicit faith,' 'lay Papist of Loretto,' 'piddling,' 'mysteries,' 'skill,' 'bear up with,' 'factor.'

(*ii.*) Re-write the third sentence in modern and courteous English.

(*iii.*) Express in other words the meaning of the fourth sentence.

(*iv.*) Write an explanatory note on 'Assembly,' and a geographical and historical one on 'Loretto.'

(*v.*) Explain the derivation of 'heretick,' 'determins,' 'arrant,' 'implicit,' 'mysteries.

(*vi.*) Parse 'of' and 'that' in the last clause of the last sentence.

2. Give an account of the subjects which occupied men's minds in England in the year in which *Areopagitica* was written.

3. Quote Pope's lines on vice, Bacon, Cromwell, 'the poor Indian,' the pride of birth.

4. "Who first taught souls enslav'd, and realms undone,
Th' enormous faith of many made for one;
That proud exception to all nature's laws,
T' invert the world, and counterwork its cause?"

(*i.*) Parse 'souls,' 'faith,' 'exception,' 'T' invert.'

(*ii.*) Express the meaning in other words.

(*iii.*) Give, in either Pope's words, or your own, his answer to the question.

5. Point out and illustrate what you consider Pope's chief merit and chief defect as a poet.

6. What does Matthew Arnold mean by saying that regularity, uniformity, precision, balance, are the qualities of a serviceable prose style? Explain fully.

7. Write a brief account of Johnson's literary work, and state clearly the nature of his literary and other influences upon his age.

CHAUCER.

TIME—TWO HOURS AND A HALF.

1. Re-write in modern English, line by line, the following passages:—

(*a*) "But of his craft to rikne wel the tydes,
His stremes and his dangers him bisides,
His herbergh and his mone, his lodemenage,
Ther was non such from Hull to Cartage."

(*b*) "Wel couthe he in eschange scheelds selle.
This worthi man ful wel his wille bisette:
Ther wiste no man that he was in dette,
So estately was he of governaunce,
With his bargayns and with his chevysaunce."

2. Explain the meaning of the following lines:—

(*a*) Ful ofte tyme he had the bord bygonne.
(*b*) His eyen steep....That stemed as a forneys of a leede.
(*c*) Sownynge in moral manere was his speche.
(*d*) Therto he couthe endite, and make a thing,
Ther couthe no man pynche at his writyng.
(*e*) And yet he had a thombe of gold pardé!
(*f*) And yit this maunciple settle here aller cappe.

3. Explain the expressions—"loken in every lith," "me mette," "my lief is faren on londe," "my sweven rede aright," "ne do no force of dremes," "so rest I the," "It is no nay," "forslouthe thy tyde," "He knew by kynde," "Real he was."

4. Give the meaning and derivation of the words—vernicle, palmer, pilgrim, lyveré, letuaries, anlas, parvys, daun, lymytour and dragges.

5. Define clearly the position of Chaucer's English with reference to the History of the English Language.

6. Describe the metre and versification of the Canterbuy Tales, and state particularly the position which final -e holds in Chaucer's verse.

7. State the plan of the Canterbury Tales, as detailed in the Prologue.

THE MERCHANT OF VENICE.

TIME—TWO HOURS AND A HALF.

1. Sketch the characters of Antonio and Jessica.

2. Write a brief critical account of the humorous element in this play.

3. Compare this play with any other by Shakspere, so as to make plain the stage of development which his mind and art had reached when it produced each.

4. Quote Portia's speech for mercy, and explain the meaning of the first line.

5. *Shylock*—

What judgment shall I dread, doing no wrong?
You have among you many a purchas'd slave,
Which, like your asses, and your dogs, and mules,
You use in abject and in slavish parts,
Because you bought them:—shall I say to you,
Let them be free; marry them to your heirs?
Why sweat they under burdens? let their beds
Be made as soft as yours, and let their palates
Be seasoned with such viands? You will answer:
The slaves are ours.—So do I answer you:
The pound of flesh, which I demand of him,
Is dearly bought, 'tis mine, and I will have it.
If you deny me, fie upon your law!
There is no force in the decrees of Venice.
I stand for judgment: answer; shall I have it?

—*Act IV, Scene* 1.

(*i.*) What are Shylock's motives for desiring the death of Antonio?

(*ii.*) Explain the meaning of 'parts' (1. 4).

(*iii.*) State the previous explanation of the force of the argument in ll. 13 and 14.

(*iv.*) Point out the run-on lines and the extra-syllable lines. What arguments have been based on the proportions of these in different plays of Shakspere?

9. Write explanatory notes on the following phrases and words:

I have thee on the hip.

Rialto,	Eanling,	Argosy,	Notary,
Lichas,	Signior,	Penthouse,	Usance.

7. By whom, and at what stage of the action of the play is each of the following passages uttered?

"The man that hath no music in himself,
Nor is not moved with concord of sweet sounds,
Is fit for treasons, stratagems, and spoils."

"Let me play the fool:
With mirth and laughter let old wrinkles come,
And let my liver rather heat with wine,
Than my heart cool with mortifying groans."

"How far that little candle throws his beams!
So shines a good deed in a naughty world."

FIRST CLASS TEACHERS—GRADE C.

ENGLISH HISTORY.

TIME—THREE HOURS.

1. Describe concisely the relation of William III. to the political parties of his reign.

2. "William the Third's reign is, no doubt, one of the most important in our constitutional history, on account of those beneficial alterations in our law to which it gave rise." Describe briefly the alterations to which Hallam refers in this passage.

3. "Walpole was not only the first English Peace Minister: he was the first English Minister who was a great financier."

Describe in detail the policy of Walpole's Administration in the two aspects here referred to.

4. Describe briefly the career and character of William Pitt, Earl of Chatham.

5. Sketch the progress of British power in India during the reigns of George II. and George III.

6. Describe the policy of the younger Pitt towards France on the outbreak of the Revolution. Contrast his policy with that of Burke, and state briefly the aim and influence of Burke's "Reflections on the French Revolution."

GEOGRAPHY.

TIME—TWO HOURS.

1. Trace the course of the following rivers, naming the chief towns on their banks:—the Vistula, Garonne, Tagus, Shannon, and Rhone.

2. Describe, geographically, Heligoland, Malta, Constantinople, Londonderry, Singapore, Halifax, Jamaica, and Hong-Kong.

3. Draw a map of Ontario, showing the direction of the principal rivers, the position of the cities and the chief lakes.

4. Write a geographical description of the Bengal Presidency.

5. Name and describe the position of the scenes of the chief events in the American Revolution.

6. Describe the position of Queenston Heights, Chateauguay, Richmond (U.S.), Monongahela, Pampeluna, Tilsit, Borodino, Sadowa, Sedan, and Arcola.

7. Draw an outline map of England and Wales, showing the direction of the Thames, Severn, Mersey, Tyne and Ouse, and the position of Leeds, Sedgmoor, Barnet, Oxford, Bristol, Hull, Naseby, Dover, Canterbury and Exeter.

ENGLISH GRAMMAR.

TIME—TWO HOURS AND A HALF.

1. "*Plant* behind plant aspiring *in* the van the dwarfish in the rear *retired but* still sublime above the rest the *statelier* stand."—*Cowper—The Task.*

(*i.*) Arrange in metrical lines.
(*ii.*) Punctuate.
(*iii.*) Divide into propositions.
(*iv.*) Parse the italicized words.
(*v.*) Point out the words not native to the language.
(*vi.*) Explain the meaning.

2. (*i.*) Make a list of the pronouns; if you include any words in it which are sometimes pronouns and sometimes not, distinguish between their different uses, if you include *another* in your list, but not *the good*, explain your reason.

(*ii.*) Classify the pronouns, giving such a definition of each class you make as will comprehend all the words you put in it and no others.

N.B.—If you find it impossible to frame a logically satisfactory answer to any part of the question, point out clearly where the one you give is defective.

3. Correct, giving reasons, or justify:
My son is to be married to I know not who.
Thou never didst them wrong, nor no man wrong.
'Twas Love's mistake who fancied what it feared.
Sir Theodore was one of the few South Sea directors, who (though he lost considerably) did not lose his character.

4. Improve the English of the following paragraphs:

"The Capitulation and Treaty of Limerick were both performed by one man named Gingel the general of William about 1791. Sarsfield held Limerick against William in 1689—1691 when it was forced to surrender on condition that the soldiers could go into foreign service and the Catholics have the same rights as a Protestant. Ginkel acquiesced in this which he should not have done as it was not in his power to form a treaty."

"They were planned by a clever servant, who to say all that can be said in his praise, is, that he is worthy of such a master as he has."

"Let us hear Dr. Lingard, to prevent his society from presenting whose work to me the sincere and pious Samuel Butler was ready to go down upon his knees."

"Sixteen have been sentenced to suffer death, but two only were left for execution."

"If your correspondent has any real object in view, he will furnish the names of the persons to whom he alludes; and I have no means of making this known to him except through the medium of your columns, and on receiving which he may be sure that the fullest investigation will be proceeded with."

5.

Art	Bay	Bound
Arch	Blow	Bow
Ball	Boot	Bugle
Bass	Bore	Bull,

(*i.*) Each of the preceding combinations of letters represents more than one word. Explain the meaning of each word.

(*ii.*) Point out the cases in which a difference of meaning is marked by a difference of pronunciation, and indicate these different pronunciations by means of rhyming words.

(*iii.*) State which words are derived from the Latin or Greek.

6. Account for the difference between the spelling of the terminations of

'deferred'	and	'differed,'
'employed'	"	'defied,'
'the Henrys'	"	'miseries,'
'infallible'	"	'incurable,'
'saddest'	"	'longest,'

ENGLISH LITERATURE.

TIME—TWO HOURS AND A HALF.

RICHARD II.

1. What, according to the Gardener, was the cause of Richard the Second's failure as a king? What is the verdict of history on this point?

2. Write a summary of Act IV.

3. By whom, and at what stage of the action of the play, are the following passages uttered?

"Of comfort no man speaks:
Let's talk of graves, of worms, and epitaphs."
"This precious stone set in the silver sea,
Which serves it in the office of a wall,
Or as a moat defensive to a house,
Against the envy of less happier lands."
"O, who can hold a fire in his hand
By thinking on the frosty Caucasus?"
"The setting sun and music at the close
As the last taste of sweets is sweetest last
Writ in remembrance more than things long past."

(*i.*) Complete the first quotation.
(*ii*) Punctuate the last quotation, and express the meaning in other words.

ADDISON.

4. Reproduce Johnson's estimate of Addison's literary merits.

THE DESERTED VILLAGE.

5. Express in a series of propositions the political economy of the Deserted Village, quoting or referring to one passage in support of each.

6. "'Twere well, says one sage, erudite, profound,
Terribly arched and aquiline his nose,
And overbuilt with most impending brows,
'Twere well, could you permit the world to live?'"
—*Book III., ll.* 191-195.

(*i.*) Give, in Cowper's words or your own, his answer to this question.

(*ii.*) To what criticism by Cowper is the quotation an objection?

7. Quote or refer to passages to show that Cowper is "an apostle of sensibility."

8. What evidence is there in the third book of *The Task* as to the connection between Cowper's religious views and his insanity?

JOHNSON AND MACAULAY.

9. Reproduce Macaulay's account of Boswell, of Johnson's relations with the Thrales, and of the inmates of Johnson's house.

COMPOSITION.

TIME—ONE HOUR.

Write a composition on one of the following topics:—
The Irish Question.
The Uncertainty of Life.
The Difference between Mechanical and Intellectual Teaching.

CHEMISTRY.

TIME—TWO HOURS.

1. If a platinum spiral, heated to redness at its lower end, be plunged into a flask containing a few drops of strong solution of ammonia, the platinum spiral becomes brilliantly incandescent and con-

tinues to glow for a great length of time, white clouds of ammonium nitrate being formed at the same time

(*i*.) Explain the cause of the increase of the heat of the platinum spiral evinced by its becoming incandescent.

(*ii*.) Explain the function of the platinum in this reaction

(*iii*.) Could a steel spiral be substituted for the platinum with the same effect? Give reasons.

(*iv*.) Write out the equation representing the chemical reaction taking place within the flask.

2. Describe a method for obtaining *pure* nitrogen dioxide.

3. A mixture of 15 C.C. dry air with 8.2. C.C. of dry hydrogen were exploded in a Eudiometer. After explosion the gas remaining in the Eudiometer measured 13.8. C.C. Calculate from these data the quantity of oxygen by volume present in 100 vols of dry air.

4. By analysis the percentage composition of a certain compound was found to be

N = 26.232
H = 7.49
Cl = 66.27

99.992

Calculate from these data the formula of the compound

5 Six glass cylinders are respectively filled with nitrogen monoxide, oxygen, carbon monoxide, sulphur dioxide, carbon dioxide and nitrogen dioxide. What experiments would you perform to identify each individual gas?

6. Represent by diagram the apparatus required for preparing sulphur trioxide.

7 A glass cylinder capacity 580 C.C.) furnished with platinum electrodes was filled at 2°C and 763mmP. with oxygen. The enclosed gas was then subjected for a length of time to electric discharges. Calculate the weight of ozone formed on the supposition that the contraction in volume equalled $\frac{1}{12}$.

8. Describe the method of preparing platinum black, and explain its action upon a jet of hydrogen.

9. What precaution must be observed safely to conduct the experiment for preparing Nitrogen from Ammonia and Chlorine?

Practical Department.

LESSONS IN CHEMISTRY.

(Continued from last month.)

IV. The Law of Diffusion, or Graham's Law.

The velocity of diffusion of different gases is inversely proportional to the square roots of their densities. This means that the densities of oxygen and hydrogen are 16 and 1, and that 1 volume of oxygen or 4 volumes of hydrogen will pass through a porous plate, dry membrane, cork, unglazed porcelain, dry plaster of Paris, thin sheet of black lead, spongy platinum, etc., in the same length of time. The densities are as 16 to 1, the velocities of diffusion are as $\frac{1}{\sqrt{16}}$ to $\frac{1}{\sqrt{1}}$, or as 1 to 4. Similarly hydrogen will diffuse nearly six times as rapidly as chlorine, 1 . $\frac{1}{\sqrt{35{\cdot}5}}$. It will follow that if the velocity of diffusion is known the density of the gas can be found by this law, and this has been applied to find the specific gravity of gases.

When gases which do not combine with each other are brought into contact at their surfaces, or even when separated by fine tubes, porous plates, etc., gaseous diffusion goes on through the minute pores. It is owing to this important property that the poisonous gases near large cities, volcanoes, manufactories, etc., do not accumulate, but rapidly distribute themselves, and the air thus maintains its purity throughout.

A good illustrative experiment consists in filling a wide tube with a plaster of Paris plug at one end and thoroughly drying the plug till it becomes porous This *diffusion tube* is then filled with hydrogen gas by displacement, but the plug is carefully covered with the thumb or otherwise, to prevent the escape of the hydrogen through the pores. When the tube is full the thumb is removed, and the air on the outside and the hydrogen on the inside of the tube begin to pass in opposite directions through the pores of the plug but at very different rates If as much air came in as the hydrogen that passes out, the tube with its lower end immersed in water would remain full of gas. But the actual fact observed is the water gradually creeping up the tube, showing that more gas goes out through the pores than comes in, that between three and four times as much hydrogen as air passes through the plug, the rise of the water being nearly a measure of the difference. One striking peculiarity is that if a heavy gas-like carbonic acid be placed in a flask, and another flask containing a light gas, say hydrogen, be inserted over the first, the two being connected by a thin porous plug, or a fine tube, the heavy gas rises in opposition to gravity, and the light one descends through the pores. A little lime water introduced into the upper flask after an hour or so will immediately turn milk-white, proving the presence of carbonic acid in the upper vessel, although carbonic acid is 22 times as heavy as hydrogen. The diffusion of liquids is a parallel case, and may be shown by putting very thick syrup in the lower flask and water in the upper. After a few hours the liquid will be the same in both vessels.

A useful application of the diffusive power of gases has been made to give warning of danger from explosions in coal mines. Light carburretted hydrogen, or fire-damp, comes next to hydrogen in diffusive power. One hundred volumes of air will be replaced by 134 volumes of fire-damp in an atmosphere of that gas. Hence a bladder containing air will rapidly distend when placed in fire-damp. The little air-balloon is placed under a small lever in the mine. If fire-damp accumulates the lever is raised and gives telegraphic warning. In an improved form the distension of the gas is made to depress the column of mercury on one side of a U-tube and raise it on the other, and thus connect the poles of a battery, which rings the danger-bell.

Another application of this principle of diffusion is called ATMOLYSIS, and consists in separating two gases out of a mixture by their different rates of diffusion. Thus if oxy-hydrogen gas comes in contact with flame it explodes violently. But if the explosive mixture be first passed through a long-stemmed tobacco pipe which is new and dry, the greater portion of the hydrogen will pass through the pores of the pipe, while most of the heavier oxygen will pass on, and when collected will no longer explode, but will rekindle a glowing splinter, proving it to be oxygen.

The molecules of a gas are in rapid motion. and the pressure of the gas on the sides of the vessel confining it is due to this motion of the molecules. Now we know that the pressure of hydrogen on the jar is the same as that of oxygen, both being equal to the pressure of the atmosphere, notwithstanding the fact that oxygen is 16 times as heavy as hydrogen. If a molecule of hydrogen weighs 2 a molecule of oxygen weighs 32. But by the law of diffusion, if the velocity of the oxygen molecule is 1, the velocity of the hydrogen molecule is 4. Now the moments, that is their pressures, will be velocity × weight. Hence the pressure of the hydrogen molecule is $4 \times 2 = 8$, the pressure of the oxygen molecule is $1 \times 32 = 32$. Now if we suppose that each jar contains the same number of molecules, say n, then since four times as many hydrogen molecules strike a point in a given time, as oxygen particles, the impact of the n hydrogen molecules will give a pressure of $n \times 4 \times 8 = 32\,n$, and of the n oxygen molecules $n \times 1 \times 32 = 32\,n$. That is the pressures are equal as required by the fact. Thus we see the law of diffusion furnishes a confirmation of Avogadro's law. That law is also borne out by researches in physics, quite independent of chemistry, and is now

generally accepted as the simplest and most probable explanation of the behaviour of gases. (See Kinetics.)

The ATOMIC THEORY, which we have taken for granted in all our explanations, is now used by chemists as a generalisation of a well established experimental fact. We assume that all substances are built up of atoms in the same sort of way that every well examined substance is found to be built up of atoms. We assume that all the atoms of the same element have the same weight, but a weight different from that of the atoms of every other element. We assume that chemical combination is the approximation of atoms to each other, and that chemical decomposition is the separation of atoms.

EXERCISE III.

64. What are the allotropic forms of carbon? How is it proved that they are chemically identical?

65. How does chlorine bleach? What conditions are necessary?

66. What are the allotropic modifications of phosphorus? How do they differ?

67. There are altogether 30 grams of oxygen in a quantity of $Mn O_2$. What is the weight of the oxide and how much oxygen can be got from it. See problem 27. Ans. 81·562, and 10 grams.

68. What is the difference in the composition of hard and of soft soap?

69. What are the varieties and the constituents of glass?

70. Find out whether there is any iron in some commercial sulphuric acid. What is the test for iron?

71. Define analysis, quantitative and qualitative, synthesis, allotropism, nascent state, isomerism and element.

72. Do fishes breathe air or what? Explain.

73. Show how to get metallic copper from cupric sulphate, and metallic lead from plumbic acetate.

74. Assign sufficient reasons for the statement "the inside of the earth is hot enough to melt rocks."

75. State the laws of chemical combination, and give examples.

76. Draw a diagram of apparatus for ascertaining the composition of water by synthesis, and explain the mode of conducting the experiment.

77. What is the reason the water is slightly acidulated in exp. 12?

78. How would you distinguish in the dark whether a certain fragment was potassium or sodium? Given a basin of *warm* water.

79. Give six examples of metathesis or displacement, and find out some monads, dyads, triads, and tetrads, that is substances which will displace, one, two, three and four atoms of hydrogen.

A PROTEST AGAINST FORMAL GRAMMAR.

We have much pleasure in reprinting the following letter which appeared a few days ago in the Toronto *Globe*:—

Some years ago at a teachers' examination in one of our county towns, when the examinations were entirely oral, and the clergy of different denominations the examiners, a young backwoodsman was asked "What is English grammar?" He had been looking rather glum as he sat facing the Scotch minister in one corner of the little room in the Court House, wondering what was coming. But his face lit up at this question, which was answered almost before it was finished, "A little book with a blue cover, sir."

If this question were put to one such as he to-day it could not be answered so briefly, for there are little books and big books and middling-sized books in every variety of colour too, and all differing. So that now our children, having mastered one set of rules and definitions that should last a lifetime, find when promoted to the higher rooms that what cost no little study to acquire, has to be forgotten and a new set learnt. Shortly before the holidays commenced a young girl from the country attending one of the higher city schools, told me that to her this was the most troublesome lesson she had. The old rules—she could repeat Davis' syntax *verbatim*—were so fixed in her memory that they would perversely obtrude so soon as she tried to clothe the same ideas in a new dress, and fearing this might cost her the examination she studied till her head and her heart both ached.

But besides all these grammars there seems to be an unwritten set of rules in the minds of the teachers that supersede those in the hands of the pupils. Not long ago a boy, following the rule in his book, made the verb to be with the adjective the predicate, but the master said it was wrong. An older boy, who had done the same, showed the master the rule, which says that the verb to be, only when it means to exist, can of itself form the predicate, but it was wrong nevertheless. They were told that the adjective, instead of helping to form the predicate, had become the "*predicative adjective*," and consequently the boys got an "imperfect." But since then the verb to be is itself tabooed. True it is in the authorized grammars, but it is ordered to be crossed out, and above it to be written the "copulative verb"—that being a larger and a harder word, is of course to be preferred. Then the grammars speak of a direct and indirect object, added to these, however, have to be interpolated the "factitive object," the "cognate object," the "object of space," the "double object," and the "indirect object No. 2."

A boy who had recently passed an examination in Latin and French, the former after only a half year's study, utterly failed in English grammar, which he had been studying for the last half dozen years, and it is his native tongue as well. And linguists will readily acknowledge that Latin and French, with their inflections, their numerous pronouns, the genders of their nouns, together with the irregularities of their verbs, present difficulties that do not exist in English. It really seems that modern grammarians have a spite against the English language because it is not inflected, and therefore try their utmost to make it as much like an inflected one as possible. But I need give no more illustrations. Parents will agree with me that English grammar is one of the most puzzling lessons the children bring home, and what with the constant change, added to the uncertainty of the text book as a guide, they are little able to give help.

Lately a clergyman, who a few years ago was reckoned one of the best grammarians in one of our collegiate institutes, visited a country school. Analysis was the lesson in hand, and the master politely asked the visitor to examine the class. He began, but his shibboleth betrayed him. The advanced thought on this ever-varying subject had somehow or other reached that wayside school, and ever after the master refrained from asking the scholarly visitor to examine a class in any subject whatever.

If the young backwoodsman had looked into this same "*little book with* a blue cover," he would have seen that "English grammar is the art of speaking and writing the English language with propriety," and the utter lack of success with which this is taught in our schools, with all the attention given to the study of grammar (I allude particularly to "speaking"), will occupy the remainder of this little paper.

When I had been in England a few months a friend said to me "Are you a Canadian?"

"Yes, and proud of it."

"Educated in Canada?"

"Yes. Why do you ask?"

"Because I have been told by some people who have lived in Canada that the Canadians spoke most incorrect English, and we have been all looking for you to make gross mistakes."

"Thank you," I replied. *Off Canadian soil I would not admit it* nevertheless the assertion was true.

The young girl to whom I have already alluded, thought she knew by heart the entire syntax of one of our grammars, said:—"I would have *went* to Dr.——for my headaches, but I *know'd* he wouldn't do me *no* good, for I *seen* a girl that tried him, and he never *done* her *no* good at all."

A boy who tried the recent combined examinations told me that he felt sure he had passed in grammar, but he *seen*, *done*, and *know'd* throughout the telling of it in the most orthodox manner.

One of our city scholars, in speaking of a pair of boots, made the assertion that "*Them* soles never *comes* off."

Trying to find a street recently, I applied to a young lady who had just left school, and was told it was a "long *ways* down."

"I went to the post office *for* to post a letter," said a young lady trained in our schools.

A young man, who has just passed with credit through one of our collegiate institutes, said in excuse for not having gone to church a few Sunday mornings ago, that he had "*laid* in bed" too long, and he always tells his dog to "*lay* down."

A senior school girl, speaking of a party at which she had been, said, "All our girls *was* dressed very *pretty*."

"How did you do your map?" one pupil asked another as I was passing. "Oh, I couldn't draw the lines *good nohow*, but I *done* the rest *good* enough."

Then how rarely one hears shall and will used correctly. How familiar the question "Will I?" than which nothing is more absurd, seeing that none but the questioner himself knows whether he will or no.

During the singing in a church this line occurred in one of the hymns, "Peace, joy, and willingness come with the sight"; but old habit was stronger than print, and "Peace, joy, and willingness *comes* with the sight" resounded throughout the building, though doubtless those pleasant-voiced singer could have learnedly explained the "prolative infinitive," the "gerundial infinitive," the "infinitive of purpose," etc.

"What kind of people have you here?" was sneeringly asked in one of our collegiate towns the other day.

"The best in the world" was the answer.

"Well you must admit that their English is barbarous."

"That is Mr. B., surely?" I said to an Old Country gentleman the other day.

"No."

"It looks exactly like him."

"Oh! but it is not. I should have known George, of course; and besides, this man spoke Canadian."

"And pray what is that?"

"Why, did you not know that *were* and *are* are obsolete in Canada? He said 'there *was* three roads on one side, but where he wanted one there wasn't *none* at all.'"

I think there is a remedy for this. If instead of trying to make the theory of grammar so difficult, teachers would practically explain the rules of

syntax, note and correct every mistake made by the scholars as often as they occur and over and over again, great practical results would undoubtedly follow, and this reproach of our people be taken away. All the mistakes to which I have called attention are purely grammatical ones, existing too in a country where every child is taught grammar. They are not dialectic differences such as exist in older lands as survivals of past colonizations or conquests.

E. G. JONES.

Toronto, Sept. 25.

Every teacher who has paid any attention to the subject will sympathize in this protest against the cramping tendency of formal grammar. If the teacher were, in the first place, to pay more attention to the structure of his own spoken language, and, in the second, to inspire his pupils with a desire to speak as correctly as he himself does, "Canadian English" would soon improve. It is of comparatively little importance whether a pupil ever learns all the technicalities of analysis as now taught in the grammars; it is of the greatest importance that each one should become able not merely to avoid gross and vulgar errors in speech but to employ a diction at once elegant and rhythmical. But what improvement can be expected while so many teachers themselves persist in using "lay" for "lie"; "will" for "shall"; and even "have went" for "have gone"? Nor are the collegiate and departmental examinations altogether free from blame for the present unsatisfactory state of affairs. The questions set do not always indicate to students and teachers the best methods of studying English with a view to practical results.

CARE OF PRIMARY CLASSES.*

At what age should a child enter school? This has been so often, and so ably discussed, that I will merely give my opinion in passing that, the age of seven years is quite early enough for any child, and too early for some. Let the brain become somewhat matured before it is burdened with anything but that which it takes up of its own free will. But pupils are sent to us under that age, and it is our duty as teachers to do the best we can for them while under our care.

First make the schoolroom attractive. Let them think they are leaving one home to go to another when they trudge away in the morning, and not only think this, but feel it. This should be the feeling in the mind of the pupils in every schoolroom, but especially where the smaller children are. Inculcate a love for the good and beautiful, by having the room adorned with bright pictures, and lovely sweet-scented flowers. This, of course, should be applied to the outside of the building too. By a little labor the children can make real pictures of the old weather-beaten schoolhouses, and will find much pleasure in their work if encouraged. Each one may have a part to perform in it—the boys doing the heavier work, and the girls the lighter and more artistic. Children will learn all the better with these fair things about them, and acquire a taste and refinement which will sweeten and beautify all their lives; the result of which in the great future no philosopher is wise enough to tell.

Again, in order to make the schoolroom attractive the teacher must be so himself. He should never act so as to give his pupils reason or occasion to think of him, as "the cross old thing," or, "such a scold," but, he should meet them there with a bright, encouraging smile, and send them from him with the same smile, only brighter, never falling into the fault of Goldsmith's Village School-master,—"letting his pupils read the day's disasters in his morning face."

But the teacher must also make the lessons attractive. He must not run away with the idea that he can just teach his pupils to read, write and cipher, for in reality there is not a branch of education into which, to a certain degree, he is not able to introduce them, giving them it is true, the merest elementary crumbs, but crumbs you know are still bread. For instance, suppose the teacher were to take five or ten minutes each day, to tend the houseplants in the schoolroom. He does not wish to loose that time, then why not give his pupils a practical lesson in botany during it. If he has a rule providing that the waterpail be passed round among the pupils after play hours—which I think is a very good one—he can introduce the merest morsels of chemistry and natural philosophy, by making short and simple statements to be remembered by his pupils, of the properties of water, and, he can give them some good ideas as to the laws of health, by never allowing them to drink while warm, or to take a long draught when very thirsty.

The teacher must be careful above all to instruct his pupils in habits of neatness, precision, and order, so thoroughly, that their very action will be influenced by it, and their very walk will show it. He should always be punctual in everything connected with his duties, and demand of his pupils that they be the same. He should have a place for everything, and see that everything is in that place—a time for everything, and see that everything is done at that time. They should be allowed to do nothing in a slipshod, careless manner and they will learn intutively to consider, that while poverty is no disgrace, dirt is a crime. Disciplined thus, his pupils will be drawn insensibly into habits of neatness, despatch, accuracy and order.

Another suggestion I would make here, is the importance of instilling into the minds of the pupils, that they are the coming men and women, who are to make Canada noted for its great, and good, and noble people. Give each one an aim, and ever keep before their minds that, their lives are what they make them, their future what they choose; and, as good boys make good men, so, every day of their school life is determining their future career as men and women. Give them a sense of importance, and the ennobling effect it will have on their minds and actions, will be surprising.

The discipline of the primary classes should be as strict as that of the more advanced. Why? A child has not yet formed any habits in school, either good or bad, therefore, let the first ones be good. Be strict by making certain laws and rules, and never departing from them. Of course every teacher has his own idea as to discipline, and punishment, but my opinion is, that he cannot maintain the one, or inflict the other, with any degree of success, unless he first understands the will and nature, the mind, character and affections, in fact the very heart of each one in his charge; and this can be accomplished only by his becoming as it were one of them, and entering heartily in their pursuits, sharing their pleasures, and sympathising with them in their sorrows, listening patiently to their little troubles, and smoothing them out with as tender a hand, and as patient an attention as a loving mother's would. It is said there is no child so hardened but has some redeeming trait in his character, and in the way just indicated, with close observation the teacher will discover it, and with tact will be able to guide the child to the accomplishment of much good.

There is too little praise and too much censure used in school by the teacher of primary classes. He must not expect children of tender age and most delicate susceptibilities, to prepare their tasks from a sense of duty altogether, but they may be stimulated to make the exertion by means of a little judicious praise. The teacher should have ever on his lips some word of encouragement, not for those who, like the hare are swift and slothful, but for those who tortoise like are diligent though slow. This praise should not be given unless really merited, and thus, by giving praise where it is due, and never letting an offence go unpunished, the teacher will establish such a strong personal ascendancy over his pupils, that they will be disposed to be guided by him, and not only regard his rules, but, anticipate his wishes, covet his approbation, and shrink from his censure as from an object of the greatest dread.

* From a paper read by Miss Marion Samson before the East Kent Teachers Association.

Notes and News.

MANITOBA.

The Normal school department for the training of teachers for the protestant public schools of Manit ba under E. L. Byington, M. A., and the collegiate department under John Fawcett, B.A., both in connection with the Winnipeg public schools are in full operation, but the attendance at present is not large.

The public school trustees of Portage la Prairie propose to open a collegiate department shortly.

Minnedosa is to build a school house to cost $9,000, and Birtle one to cost $7,000 shortly.

The convocation of the University of Manitoba has elected the Hon. A. M. Sutherland, B.A., A. C. Kellano, B.A., and the Hon. S. O. Briggs, B.A., as its representatives on the Council of the University for the ensuing ear.

The graduates of the University now number about 80.

The Rev. D. M. Gordon, B.A., and the Rev. C. Pitblado are two of the seven representatives of Manitoba college on the council of the University, and the Rev. Professor Cluthier has been selected by the authorities of St. Boniface college in place of the Rev. G. Dugast.

The fine New Manitoba college has been completed, and is occupied. Rev. Professor Bryce, M.A., LL.B., principal of the college who was travelling in the old country last year, returned some time ago.

The authorities of St. John's college are considering plans for the erection of a wing of a new college, the proposed wing will cost about $38,000 or including a Professor's residence $45,000. Some very fine plans have been sent in.

TORONTO COLLEGES.

Toronto may fairly lay claim to being regarded as a city of colleges. Too often the political capital of a country fails to secure intellectual pre-eminence. This is notably the case in the United States. There the great colleges, the great journals, the great publishing houses, are all located outside of Washington, which in point of intellectual and artistic life is far surpassed by New York, Boston, and Philadelphia. Toronto is differently situated. It is not merely the political capital of Ontario but is in some respects the intellectual capital of the Dominion. And no phase of its intellectual life is more interesting than that which is connected with its colleges and students. During the summer months the academic halls are deserted, but during the early days of October the dispersed undergraduates reassemble to meet the thinned ranks of old acquaintances recruited from a large array of freshmen.

Besides the public and separate schools, the private schools, convent schools, and church schools—to say nothing of the Collegiate Institute, the Normal and Model Schools, and Upper Canada College there are located in this city several high class colleges all of which seem to be in a more than usually thriving condition at the beginning of this academical year. First comes

UNIVERSITY COLLEGE.

This is chartered by Act of Parliament and endowed out of provincial funds. It is non-sectarian in function and management and serves as chief feeder for the University of Toronto. For some years past the attendance of students at University College has been rapidly increasing until it has almost outgrown the accommodation afforded by the building, and the increase this year shows no abatement. The attendance at its classes of students from Knox College, Macmaster Hall, and Wyckliffe college—all of which are strictly denominational and theological—is the result of an arrangement which cannot fail to be beneficial to all parties concerned. The divinity students form a large contingent at University College, and they are, while attending it, thrown into contact with others besides members of their own denomination. The importance of University College has been enhanced by the action of Toronto University Senate in accepting its examinations for the first and third years in lieu of their own—a privelege accorded at the same time to all other affiliated colleges.

SCHOOL OF PRACTICAL SCIENCE.

This also is provincial in character, and is closely related to University College. Some of the teachers in the latter institution teach also in the former, or, rather, some of them have their lecture rooms located in the School of Practical Science and their lectures are attended by the students of both institutions jointly. Advantage has been taken of the additional space afforded by a new building to establish chemical and mineralogical laboratories, but much more requires to be done in this direction before the needs of students will be fully supplied. One of the features of the course in the school is the engineering department which has been made as thorough and practical as possible. In these days of mining and railway building such a department is indispensable.

THEOLOGICAL SCHOOLS.

One of the features of the Toronto collegiate system is the tendency of religious denominations to economize their resources by confining their own expenditures to the maintenance of purely theological schools and availing themselves of the facilities afforded by University College for acquiring an excellent literary and scientific training. In this way a cordon of divinity halls has grown up around that institution. including at present the following :—

Knox College. This is a Presbyterian theological school of long standing and high reputation, the session now opening being its thirty-eighth. The theological course covers three years but those students who have not obtained degrees in arts from some university are required to take a preliminary literary and scientific course of three years. This is done chiefly by means of attendance at the lectures in University College in such subjects as are found necessary or expedient. Knox College has in this way been for many years an important ally of Toronto University and University College, for all intending divinity students are strongly urged to go regularly through the arts course for a degree before commencing the study of theology.

Macmaster Hall. Following the example of the Presbyterians the Baptists have established a flourishing theological school in close proximity to and intimate relations with University College. This is only its second session but the well known liberality and enterprise of the denomination to which it owes its existence will make its future secure. The students of Macmaster Hall, like those of Knox College, take at least part of their literary and scientific course in University College, and are advised to go through the regular curriculum for an arts degree.

Wyckliffe College is a new building tenanted by a comparatively new corporation known heretofore as the "Protestant Episcopal Divinity School." It was formed and is still maintained by the low church party in the Anglican diocese of Toronto. With the character of its theological tuition the public are not concerned, but it is a matter of general interest to know that, like the Presbyterians and Baptists, the Evangelical wing of the Episcopal church recognize the benefit to be derived from intimate relationship with University College. The new building, is like Macmaster Hall, located on property belonging to the University endowment. It has just been completed and will be occupied this session for the first time.

TRINITY COLLEGE.

The university of Trinity College is amongst our older educational institutions. It was founded as an Anglican College and university when King's College was secularized in 1849, and the fact that it is controlled by the high church party is the reason for the establishment of Wyckliffe College. The situation of Trinity is unfavorable to its expansion and there are other reasons which limit the amount of patronage it receives, but it has done good work in its day and with a recently reorganized staff it is capable of doing still more. Trinity College, as a university, has power to confer degrees in the other learned professions as well as in divinity.

ST. MICHAEL'S COLLEGE.

This institution occupies a position distinct from all those already named, inasmuch as it is the only one affiliated to Toronto University, except University College, while it has made provision in its curriculum for only a part of the University course. St. Michael's is under the auspices of the Roman Catholic church, but it is largely, if not entirely, self-sustaining as a collegiate institution. It is well patronised and with the additional prestige conferred by affiliation it may be expected to do still better work and more of it.

MEDICAL SCHOOLS.

Toronto is abundantly supplied with facilities for educating medical practitioners. There are two medical colleges, each of which is well equipped with teachers and is in a position to avail itself of the excellent hospital facilities of a large city which has an average share of accidents. The names of these colleges are the "Toronto Medical School" and the "Trinity Medical School," the former being affiliated with Toronto and Victoria, and the latter with Toronto and Trinity Universities. The attendance at both schools is this year as large as usual, if not more so.

THE STUDENTS.

The students in attendance at all these institutions, supplemented by the law students registered at Osgoode Hall and articled in the different city law offices, form a large and important element in the population of Toronto. They have no reason to complain of want of public interest in their class, for the literary and other entertainments they give are always well patronized and some of them are amongst the social events of the season. Of late years the "guild" spirit has become much more

pronounced amongst the students, but this is not to be regretted if its development is not accompanied by the tendency to boisterous conduct which is so generally associated with the public conception of the average student. There are a few college residences, namely in University College, Trinity College, Knox College, Macmaster Hall, Wycliffe College, and St. Michael's College; but the number ccommodated in all of these is collectively only a part of the whole, and at the present rate of increase of attendance will soon be an insignificant part. To provide board and lodging during the academical year for so many students is a problem left to be solved very largely by private enterprise and so far the solution has been quite satisfactory. A literary society is one of the ordinary adjuncts of college life in Toronto, as elsewhere, and some of them are very large and flourishing associations. In University College the society is "Literary and Scientific:" in Knox College it is "Literary and Metaphysical;" in Osgoode Hall it is "Literary and Legal.'

Readings and Recitations.

THE RIDDLE

Fierce and bitter was the struggle,
But the strife at length was o'er,
And the joyful news went ringing,
Ended is the cruel war.
Proudly homeward rode his lordship,
Bold Sir Guy of Atheldare;
Flashed his eyes with pride and triumph
As his praises filled the air.

Every heart was filled with gladness.
Said I, every heart? Ah, no?
Here, amidst this joyful people,
One heart ached with speechless woe:
T'was the little captive stranger,
Claude, the vanquished Norman's son—
Taken prisoner, brought a trophy
Of the victory they had won.

Bravely fought he for his freedom,
And when taken, smiled disdain
As his captors stood around him,
Bound his arms with gyve and chain;
Smiled defiance when they told him
That Sir Guy his life would spare,
Should he serve and swear allegiance
To the house of Atheldare,—

Spurned their offer, while his dark eyes
Spoke the scorn he could not tell,
As he followed without murmur,
To his dreary prison-cell.
Then they left him, and his young heart
Bowed beneath its weight of pain
For a moment. But he rose up,
Calm, and cold, and proud again.

From without the grated window,
In the pleasant court below,
He could see the little princess,
As she wandered to and fro.
Long and eagerly he watched her;
Like a cloud the golden hair
Glanced and rippled in the sunlight,
Framing in her face so fair.

And the little Highland princess,
As if by a magic spell,
Seemed to feel her eyes drawn upward
To the dreary prison-cell;
And the sad, pale face she saw there
Caused the ready tears to start,
While a woman's gentlest pity
Filled the tender, childish heart.

Then a firm resolve rose in her—
Lit the troubled little face.
Not a moment to be wasted;
Breathless, hurrying from the place
On an errand fraught with mercy,
Straight she to her father sped;
Humbly kneeling down before him,
Lowly bowed the dainty head,

While the sweet lips, red and quivering,
Faltered out her anxious plea,
Told her pity for the captive,
Begged Sir Guy to set him free.
But he answered, sternly gazing
On the downcast face so fair:
"Can our daughter doubt the justice
Of the house of Atheldare?

"But we pardon this, and tell you
Of our wise and just decree:
If this captive swear to serve us,
We will spare and set him free."
Then up rose the little maiden
Dauntlessly, without a fear.
"Would you have a traitor serve us?"
Rang her voice out, sweet and clear.

And Sir Guy paused for a moment,
All his anger from him fled,
As he watched her, flushed and eager,
While her cause she bravely plead.
Gravely smiled he as she ended,
Drew her gently on his knee:
"You have conquered, little pleader—
You have gained the victory.

"But your prince must earn his freedom:
Not with bow or spear in hand—
We are weary of the bloodshed
Spread so long throughout the land.
Let him ask our court a riddle:
Six days' grace to him we give,
And the court three days to guess it;
If it fail, he then may live."

Once more in the pleasant court-yard
Danced the little maid in glee;
Surely he could find a riddle
That would save and set him free.
But five long days and five nights passed,
And the prince no riddle gave;
To his brain, all dazed with sorrow,
Came no thought his life to save.

And the little blue-eyed princess
Pondered sadly what to do,
Till at last she sought the counsel
Of her old nurse, tried and true.
"Go," her nurse said, as she finished,
"Go, and search the green fields over,
Never stopping for an instant
Till you find a four-leaf clover.

"Take and put it in a nosegay,
In the centre, full in sight,
Throw it to the little captive;
All I promise will come right."
Out into the merry sunshine,
While her feet scarce touched the ground,
Went the princess, never stopping
Till the treasure she had found.

Threw it with the pretty nosegay,
In the window, barred and grated.
Then, and only then, she paused—
Paused, and hoped, and feared, and waited.
Through the window, barred and grated,
In the dreary prison-cell,
Like a ray of happy sunshine
At his feet the nosegay fell.

As he raised and held it gently,
While the burning tears brimmed over,
Through the mist he caught a glimpse
Of the little four-leaf clover.
Thoughts went dashing through his brain,
And, before the evening dew
Kissed the flowers of the land,
All the court this riddle knew:

Fourteen letters am I made of.
Over countries fair and bright,
Under many different heavens,
Rain we flays, both red and white.

Living with my many brothers,
Ever in the long, sweet grass,
As we play, the happy zephyrs
Fan us gently as they pass.
Chanced you e'er to find me out,
Luck I'd surely bring to you.
Often of me have you heard.
Very often seen me, too;
Ere you turn away from me.
Read me well—my name you'll see.

Three days passed, unguessed the riddle,
And the sun rose joyfully,
Turned the prison bars all golden,
Told the captive he was free.
Life had never looked so radiant,
Earth had never seemed so fair;
Sang the birds and played the fountain,
Sweetest fragrance filled the air.

But the day wore slowly on,
Sank the sun from out the sky
Ere the waited summons came,
And he stood before Sir Guy.
In the stately council there
Knelt he down with peerless grace;
Not a tinge of doubt or fear
In the proud patrician face.

To him, then, began Sir Guy:
"You have earned your freedom well,
And, we pray you, speak the answer
That our court has failed to tell.
Then up rose the little captive,
While his eyes with fun danced over:
"If you read the letters downward,
You will find a four-leaf clover."

And Sir Guy laughed long and loud,
As he read the riddle through,
That the court had failed to guess
With the answer in full view.
So the little prince was saved,
And ere many days were o'er,
Happily he sailed away
Toward his longed-for home once more.

But he carried back a memory
Of a court-yard fresh and fair,
Where there walked a little princess
Radiant with her golden hair.
So my story's almost finished,
And the end I need not tell,—
For of course 't is in the ringing
Of a joyful wedding-bell.

St. Nicholas for October.

Teachers' Associations.

The publishers of the JOURNAL will be obliged to Inspectors and Secretaries of Teachers' Associations if they will send for publication programmes of meetings to be held, and brief accounts of meetings held.

PEEL.—The regular half-yearly meeting of the teachers association was held in the lecture room of the Presbyterian church, Brampton, on *Thursday and Friday, 8th and 9th June. The attendance was fair and* there was considerable interest displayed in the discussion of the various topics presented to the convention. After an interesting and instructive address by the 1st vice-president, Mr. D. McDonald, on "The Senses in their connection with education," a discussion on text-books was introduced by Mr. A. Morton, head master, Brampton public schools. He first pointed out the tendency of our present system towards the right and proper use of text-books, showing that their value as a part of our educational machinery should not be over estimated, nor yet should it be rated too low. He then pointed out some of the most glaring defects of our present series and the urgent necessity for a change. At the close of the discussion a committee was appointed to examine the various series of text-books which have been, or are being prepared, and to report to the association. The election of officers resulted as follows:—Pres., Dr. Law, head master. Streetsville high school; 1st vice-pres., Mr. A. Murray, M. A., head master, Brampton high school; 2nd vice-pres., Mrs. Corbet, Brampton; sec.-treas., Mr. J. P. Hume, B. A. of Brampton high school. Rev. Mr. McLaren, in his address to the teachers, took as his topic "The mighty results of the teacher's influence on the plastic minds of the young." He referred to the teacher's duty to magnify his office, to co-operate with the parent in developing, (1) orderliness in thought and expression as well as in surroundings, (2) perseverance, (3) a strong sense of what is right and honorable. The teacher should endeavor to teach the pupils to be ladies and gentlemen in every sense of the term; strive to develop in them whatever would tend to make them more manly or womanly. At the close of his excellent address Mr. McLaren was tendered a very cordial vote of thanks. Mr. R. Cowling of Malton, in introducing the subject of "Entrance examinations" expressed himself as favorable to pupils remaining at the public schools even after passing the entrance examination. He thought physical education was greatly neglected, especially at our high schools. On these subjects there was considerable discussion. Mr. D. S. Allen, of Mono Road, explained his method of teaching arithmetic in a very clear and simple manner. The chairman then introduced the Rev. G. M. Milligan of Toronto, who delivered a stirring and practical address on the general duties of the teacher. He urged great care in the ventilation of the schoolroom, a proper supervision of the sports on the playground, and every other possible means of developing the physique of the pupils. He strongly recommended frequent common-sense-talks with them regarding dress, diet, etc. The speaker dwelt at considerable length on the necessity of a teacher being *thorough, and at the same time original, guarding against every im*proper tone and look, and cultivating in the scholars, both by precept and example, the grand trait of "Looking not on their own things, but on the things of others." At the close Mr. Milligan was tendered a very hearty vote of thanks which was carried with applause. The whole proceedings were greatly enlivened with vocal and instrumental music.

SOUTH HASTINGS.—The regular semi-annual meeting of this association was held in the central school building on Thursday and Friday, May 25th and 26th. The president, J. Johnston, I. P. S., occupied the chair. The officers were elected with the following results:—President, J. Johnston, I. P. S.; vice-president, Miss J. Jack; sec.-treas., S. A. Gardner; committee of management, J. W. Dafoe, J. W. Rodgers, G. W. Sine, W. J. McCannon, G. S. Wilson and O. S. Hicks. Delegate to provincial association, *O. S. Hicks. Prof. Dawson,* head master, Belleville high school, gave an excellent address on "Health in the schoolroom," giving some valuable hints on the importance of good ventilation, proper heating and lighting, and out-door exercise. Miss Johnston gave a recitation, and Miss Wilcox sang "The sea is England's glory." Dr. McLellan, senior high school inspector, gave an excellent explanation of the "Application of the principles of symmetry and factoring in algebra." In introducing the subject he alluded to the very great difference between the algebra taught in our schools now, and that taught a few years ago, urged the importance of a thorough knowledge of this subject as a preparatory training for the higher mathematics, and concluded by factoring a large number of examples by applying the principles of symmetry. Mr. D. L. McAinsh gave an interesting paper on "Singing in public schools," which was well received. Miss Harold then sang "Annie Laurie" in an effective manner, after which Mr. G. M. Yerex, by means of wooden balls cut into equal parts, illustrated his method of teaching fractions. An animated discussion followed in which part was taken by Dr. McLellan, H. M. Hicks, M. Davidson and others. In the evening Dr. McLellan delivered an eloquent and stirring address to a large and appreciative audience, on the subject of "National education," Dr. Hope, sheriff of the county, presiding. Second day.—On reassembling Prof. J. S. McMurray played and sang "Little Alice," after which Dr. McLellan took up the subject of "Intellectual methods of teaching elementary arithmetic." He advised the use of objects to convey correct ideas of numbers, and always to proceed from the concrete to the abstract, illustrating in his usual masterly style. Miss Powell read with admirable execution "The fall of the Pemberton Mill." H. M. Hicks, head master, Trenton high school, explained his method of teaching bookkeeping, *after which Prof. McMurray sang* "The Tar's Farewell." Dr. McLellan then gave an address on "Reading." In introducing this subject he said the objects to be aimed at, are, distinct utterance, clearness of enunciation and a fair degree of expression, and the principal defects to be guarded against are, slurring of the initial and final consonants and shortening of longer vowel sounds. Miss Powell and Prof. McMurray sang a couple of songs which were well received, after which the Rev. H. G. Parker explained his method of teaching Canadian history. Miss Diamond and Miss Bollard sang a duet, entitled "We'd better bide a wee" very effectively. Dr. McLellan then gave an address on "Good and bad questioning." The objects to be attained are (1) to find what the child knows, (2) to fix knowledge in the child's mind, (3) to discover the pupil's difficulties and misapprehensions so as to be able to assist or correct them, (4) to test what has already been taught. Questions should be terse, clear, pointed and not answerable by a single word. The discourse was a very valuable one, and was well appreciated. Rev. J. W. Burke endorsed the Doctor's remarks. Prof. McMurry sang "Kiss and whisper sweet good night" after which a hearty vote of

thanks was accorded Dr. McLellan, endorsed by appropriate speeches from Mr. O. S. Hicks, Jno. Dafoe, Mr. Harvey, Hon. B. Flint, Prof. Bannister, Prof. Metzler, Messrs. I. Diamond, W. Johnston, and T. Holden The Hon. B. Flint moved a vote of thanks to J. Johnston I.P.S. for South Hastings and Belleville, for the zeal, earnestness and careful painstaking manner in which he had discharged his duties, which was seconded by W. Johnson Esq., of the Belleville board of education. Mr Johnston made a suitable reply, and after singing "God save the Queen" the institute adjourned.

GLENGARRY.—The half-yearly meeting of the Glengarry teachers' association was held in the brick school house Alexandria, on Thursday and Friday, the 7th and 8th September. Members of the association assembled on Thursday to the number of fifty, including the teaching staff of the Williamstown and Alexandria high schools. As usual the fair sex was largely in the ascendant. The president of the association, Dr McDiarmid, inspector of public schools for the county, was in the chair on both days of the meeting. An effort had been made by the committee of management to secure a lecture from some leading educationist, but owing to the fact that the matter was not taken up at a sufficiently early date, they were unable to secure one. This will be remedied at the next meeting, the secretary having been instructed to take the necessary steps to secure such valuable assistance. A step in the upward direction was taken at the last meeting with regard to the procuring of the CANADA SCHOOL JOURNAL for the teachers of the county. The secretary succeeded in getting over fifty subscribers to this valuable periodical which will be forwarded to each as soon as the list can be sent on. In many respects the last meeting was one calculated to do a considerable amount of good, many of those present apparently taking a keen interest in the proceedings, and discussing the papers in an animated manner. Among the papers contributed at the last meeting were the following:—Mr. J. D. Lewis, assistant master in the Williamstown high school read a very interesting paper upon "Euclid" treating that somewhat dry subject in a very happy manner. Mr. W. D. Johnston, H. M. H. S., Alexandria, read an instructive paper upon "Elocution" showing the difficulties which stand in the way of good reading and speaking. Miss Annie Ross of Athol gave a paper entitled "Teaching reading to beginners," which was well worthy of the attention of every teacher. Miss Elizabeth Grant contributed a paper on "Composition" which was deservedly eulogized. Besides the papers read, questions were asked and discussions took place upon:—"Formation of time tables," "Desk work," "Importance of reviewing," "Geography for third and fourth classes," etc. The president gave explanations concerning the recent regulations issued by the education department, and also timely remarks upon the subject of "Contagious diseases," and "Treatment of the apparently drowned." The proceedings were agreeably varied by readings by Messrs. W. D. Johnston and Thos. Scales, B. A., of the Williamstown high school. In accordance with a resolution passed unanimously by those present, the secretary was instructed to forward a letter of condolence to the parents of the late Jeremiah McCabe, a member of this association, who was accidentally drowned during the summer. The association then adjourned until the first week in February.

REVIEWS.

BEOWULF. Edited from the text of Heyne by J. A. HARRISON, Professor of English and modern languages in Washington and Lee University. *Boston, Ginn, Heath & Co.* This little volume contains only the text of "Beowulf," but the publishers promise at an early date a glossary for the work. It is something to have the text prepared as Mr. Harrison's has been, and to have it printed as the publishers have done it We trust the editor and publishers will prepare an edition in which the text will be accompanied by judicious notes as well as a glossary, for Anglo-Saxon being to the English student practically a foreign language he needs assistance here quite as much as he requires it in the study of Greek or Latin. How long will it be before our Canadian colleges learn that without a knowledge of Anglo-Saxon good English scholarship is out of the question. We hope soon to see "Beowulf" prescribed as a text book in every Canadian University as well as in similar institutions in the United States.

THE CHORAL CHOIR. By W. D. PERKINS, Mus. Doc. *Boston. Oliver Ditson & Co.* This is a collection of pieces suitable for choir practice, the former half of the volume being devoted to secular, and the latter to sacred compositions. The work of selection has been well done, as the name of the compiler would warrant, and the veteran publishers have done their part in getting out the work in a neat form and at a low price.

PRACTICAL GRAMMAR: A text book for use in Business Colleges. By SEYMOUR EATON, of the Winnipeg Business College. *Winnipeg, R. D. Richardson.* This little treatise may be briefly described as one more protest against the fetters imposed by formal grammar. The rules and definitions are literally few and far between, and the intervals are filled up with numerous examples of bad English to be corrected.

EXERCISES IN ENGLISH GRAMMAR AND COMPOSITION. By DAVID SALMON; *London, Moffatt and Paige.* This, as its name expresses, is not a grammar, but a collection of exercises. The sentences illustrative of the various definitions connected with the parts of speech are numerous and admirably classified, and this remark applies equally well to the exercises in composition. The only part of the collection, that is deficient is the department devoted to errors for correction which occupies only two pages whereas from its relative importance it should have had many times that number. Teachers will find the work extremely useful as a repertoire of sentences when they are too busy to construct them themselves. Two features are worthy of special notice: (1) that the collection is not based on any special grammar, and (2) that the sentences are taken largely from classic writers.

THE READER'S GUIDE TO ENGLISH HISTORY. By W. F. ALLEN M.A. *Boston, Ginn, Heath & Co.* The object of the compiler of this little work is to give in a compendious form a full list of the works illustrative of the successive periods of English History. The general plan is that of four parallel columns the first of which on each page is taken up with a genealogical tree of the Royal Family . the second, with a list of historical works relating to the period, the third, novels, poems, and plays illustrating the same era; and the fourth, the same class of works illustrating contemporary history. When this plan is varied it is in order to introduce matter to the student's advantage. The plan is ingenious and it has been well executed.

MAGAZINES.

ST. NICHOLAS for October is above the average; one of its best pieces has been this month transferred bodily to our columns. The announcement for 1883 is an extremely tempting one. *St. Nicholas* should be taken into every family where there are boys and girls. It forms one of the best antidotes for the yellow-covered sensational literature which has such a pernicious effect on the young.

THE WHEELMAN is a new magazine published in the interest of bicycling, by the "Wheelman Co.," of Boston. The magazine is got up in the style of the *Century* and the first number is spiritedly edited. A long list of contributors is published and if they only fulfil the promise of their names the future of the venture may be considered as assured, for the number of bicyclers is now "legion."

THE ATLANTIC MONTHLY for October begins with a very readable description of a day among the Sabine Hills by Harriet W. Preston. The article is sufficiently profuse in Horatian allusions to be interesting to the classical scholar without seeming pedantic to the ordinary reader. A characteristic little poem by Whittier forms the transition to a descriptive account by Horace Scudder of one of the less known English artists, Frederic James Shields. 'Studies in the South" is continued through part VIII and "The House of a Merchant Prince" through parts XIX and XX. Mr. Cushing gives a highly interesting account of "The Nation of the Willows," a small tribe of Indians inhabiting one of the Arizona canyons. One of the most valuable papers is that by W. T. Hewett on "University Administration" an article which contains information calculated to be useful to those entrusted with the management of colleges and universities in Canada.

HARPER'S MONTHLY is profusely illustrated as usual. The first paper is the second instalment of a tour through Surrey in England in the course of which Mrs Lillie introduces the reader to a gypsy camp and to a band of strolling players performing in a rural district. "Flash; the Fireman's story" is an admirable specimen of genuine American humor. "Flash" is a played-out fire horse who has been sold to a milkman. The "ruling habit" is strong in him however and after a rush to a fire at the expense of his masters property he

> "moped an' wilted an' dawdled—faded away once more,
> Took up his old occ'pation of votin' life a bore;
> Laid down in his harness, and—sorry am I to say,
> The milkman he had drawn there drew his dead body away."

"Medical Education in New York" is illustrated with portraits of leading medical professors some of whom are well known to Canadian ex-students. The appreciative sketch of Dante Gabriel Rossetti comes opportunely as a set-off to the effort of Mr. Oscar Wilde to take to himself the credit for the æsthetic movement. Rossetti was the real *Coryphæus* of a school of which Morris, Swinburne, and Burne Jones are all more distinguished members than Mr Wilde. Of the other articles the more important are "Southern California," "The Spanish Discoveries," and "Symmes and his Theory,"

THE CENTURY has for frontispiece a fine portrait of the greatest of the United States Presidents, Abraham Lincoln. "Life in a Mexican Street" is as fascinating in letter press as in illustrations. "The Gibraltar of America," full of life-like representations of quaint scenes and striking scenery makes this number a peculiarly interesting one to Canadians. To those who have read the story of Garfield's nomination the account of "How Lincoln was nominated" will be doubly welcome. One of the most diverting papers in an excellent number is Mr Barrow's admirably illustrated description of "A Georgia Corn-shucking."

THE NORTH AMERICAN REVIEW for October has the usual amount of thoughtful reading on important social topics. Those who are interested in the "Marmion" controversy should read Mr Frothingham's paper on "The Morally Objectionable in Literature," in which the distinction between the immorality that is fatally injurious and that which is comparatively harmless though still objectionable is ably drawn. "Safety in Railway Travel and "The Protection of the Forests" are both interesting.

HARPER'S YOUNG PEOPLE for October comes full of good things in type and beautiful engravings *Young People* as a source of entertainment for young people has no superior and few rivals.