

Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- |  |  |
|--|--|
| <input type="checkbox"/> Coloured covers/<br>Couverture de couleur   | <input type="checkbox"/> Coloured pages/<br>Pages de couleur   |
| <input type="checkbox"/> Covers damaged/<br>Couverture endommagée  | <input type="checkbox"/> Pages damaged/<br>Pages endommagées   |
| <input type="checkbox"/> Covers restored and/or laminated/<br>Couverture restaurée et/ou pelliculée  | <input type="checkbox"/> Pages restored and/or laminated/<br>Pages restaurées et/ou pelliculées  |
| <input type="checkbox"/> Cover title missing/<br>Le titre de couverture manque   | <input checked="" type="checkbox"/> Pages discoloured, stained or foxed/<br>Pages décolorées, tachetées ou piquées   |
| <input type="checkbox"/> Coloured maps/<br>Cartes géographiques en couleur   | <input type="checkbox"/> Pages detached/<br>Pages détachées  |
| <input type="checkbox"/> Coloured ink (i.e. other than blue or black)/<br>Encre de couleur (i.e. autre que bleue ou noire)   | <input type="checkbox"/> Showthrough/<br>Transparence  |
| <input type="checkbox"/> Coloured plates and/or illustrations/<br>Planches et/ou illustrations en couleur  | <input type="checkbox"/> Quality of print varies/<br>Qualité inégale de l'impression   |
| <input type="checkbox"/> Bound with other material/<br>Relié avec d'autres documents   | <input type="checkbox"/> Includes supplementary material/<br>Comprend du matériel supplémentaire   |
| <input type="checkbox"/> Tight binding may cause shadows or distortion<br>along interior margin/<br>La reliure serrée peut causer de l'ombre ou de la<br>distorsion le long de la marge intérieure   | <input type="checkbox"/> Only edition available/<br>Seule édition disponible   |
| <input type="checkbox"/> Blank leaves added during restoration may<br>appear within the text. Whenever possible, these<br>have been omitted from filming/<br>Il se peut que certaines pages blanches ajoutées<br>lors d'une restauration apparaissent dans le texte,<br>mais, lorsque cela était possible, ces pages n'ont<br>pas été filmées. | <input type="checkbox"/> Pages wholly or partially obscured by errata<br>slips, tissues, etc., have been refilmed to<br>ensure the best possible image/<br>Les pages totalement ou partiellement<br>obscurcies par un feuillet d'errata, une pelure,<br>etc., ont été filmées à nouveau de façon à<br>obtenir la meilleure image possible. |
| <input type="checkbox"/> Additional comments:/<br>Commentaires supplémentaires:  | Continuous pagination.   |

This item is filmed at the reduction ratio checked below/  
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
								✓			

# The Canada School Journal.

Vol. V.

TORONTO, APRIL, 1880.

No. 85.

## The Canada School Journal

IS PUBLISHED THE FIRST OF EACH MONTH AT

11 WELLINGTON ST. WEST, TORONTO, ONT., CAN.

Subscription \$1.00 per year, payable in advance.

Address—W. J. GAGE & CO., Toronto.

### 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.

### EDUCATION IN NOVA SCOTIA.

The report of Dr. Allison, Superintendent of Education, for Nova Scotia for the year ended Oct. 31st, 1879, is before us. It furnishes interesting information concerning the state of public education in that Province. We learn that during the school term there were registered in the schools 99,094 different pupils, or 1 in 3.9 of the entire population of the Province according to the census of 1876. The total number of teachers employed for the winter term was 1,960, and for the summer term, 2011. The grants to teachers of the Common Schools paid from the Provincial treasury amounted to \$161,655.36. Other charges, such as Inspection, Examination, Education Office, High Schools, &c., brought the expenditure for Public Schools to \$180,199.80. Add to this \$15,200 for colleges, \$5,100 for special academies, and \$5,075 for the Normal School, and we have a total educational expenditure for the year of \$205,574.80, stated to be a decrease of \$2,540.11 as compared with the preceding year. The average cost to Government of each pupil registered in the Public Schools was \$1.53.

The highest average annual salaries paid to male teachers of the first class were in Halifax City, viz., \$793. Yarmouth County follows with \$642. To first class female teachers, Halifax City pays an average of \$446, and Halifax County of \$366.

The Superintendent of Education devotes considerable space to the discussion of Intermediate Education. Copious details are given in the tables of the work done in the County Academies or High Schools, and in the Special Academies of Pictou and Yarmouth, the latter holding to the former, we suppose, a relation somewhat similar to that held by the Collegiate Institutes to the High Schools of Ontario. It is made quite plain that this department is not in a perfectly satisfactory condition. The Superintendent's suggestions looking towards reform are based on the sound doctrine that "the vigorous maintenance of a system of elementary education through the Common Schools of a country is largely condition-

ed on the adequacy of the provision made for higher instruction." The comparative infrequency of populous centres seems to lie at the root of the difficulty, which Dr. Allison seeks to obviate by a system of High School combining the efforts and resources of several counties.

We take from the report the following facts respecting the colleges of Nova Scotia :

	Undergraduates.			
	Freshmen.	Sophomores.	Juniors.	Seniors.
Kings.....	7	5	7	10
Dalhousie ...	14	14	4	5
Acadia .....	23	12	16	13
St. Francis Xavier's...	19	13	12	8
Mount Allison.....	11	3	6	11
Saint Mary's.....	20	10	7	3

### HIGHER FEMALE EDUCATION IN ENGLAND.

The "logic of events" has happily solved the knotty question of Higher Education for Females in England. What in 1846 was deemed chimerical and unwise, if not unwomanly as a new social "departure," has in 1880 demonstrated not only its entire success, but its immense value as a great moral and social force in elevating the state and promoting the usefulness of large numbers of women in England,—and women too who would otherwise have been dependent and helpless, or aimless and frivolous.

In a late number of the *Nineteenth Century*, Lady Stanley of Alderley has contributed a valuable historical paper on the subject. Right Hon. J. Stansfeld, M.P., has also, in a previous number of the same Review, contributed an able and exhaustive article on the medical education of women. Other writers have also discussed the question. The English public are, therefore, well informed on the subject, and the recent success of Miss C. A. Scott, of Girton College, who obtained the rank of eighth wrangler at Cambridge, has awakened new interest in the subject. In this country little is known practically as to the substantial progress which has been made of late years in England in this important matter. We shall therefore, state the principal facts in regard to it.

The first practical movement made in England was the establishment by the Rev. F. D. Maurice, of Queen's College, London, in 1848, chiefly for governesses. Subsequently its functions were enlarged; and all were made welcome "who could come to the classes." The numbers in attendance have steadily increased, until they now reach 400. The latest change has been in the direction of opening the London University examinations and degrees to the students of Queen's College. Hereafter the matriculation examination of the University will be the goal of the four years' course. A further course may also be taken in the University.

The next substantial movement was made in 1862 by the

University of Cambridge in establishing local intermediate examinations, to which in 1863 young women were admitted. The plan succeeded; and after a time Oxford followed suit, but with this difference, that it admitted boys and girls to the same examinations. The first universal examination took place in six places in 1863, at which a total of 126 candidates attended. Last December the fifteenth examination was held at 76 places; the aggregate number of candidates was 2,879. Last year 30 per cent. of the whole number of candidates which attended these university local examinations were girls. The Oxford system has afforded curious evidence as to the comparative intelligence and working power of boys and girls—on the whole in favor of the former. The boys excel, as might be expected, in their own special subjects of Latin and Mathematics, but the girls in modern languages and other subjects.

The next natural movement was to obtain the advantage of university education for women. As an experiment Girton College was opened, and subsequently Newnham Hall. Both are close to Cambridge. The former was modelled on the old University College basis, the latter on a more flexible and modern plan. Girton followed the method and studies of the University—had the same curriculum, within the same limit of time, and its students were admitted to examination on the same conditions as the ordinary undergraduates. The result has proved beyond a doubt the controverted fact of woman's capacity for such mental labor as young men of the same age are expected to undertake, and the success of Miss Scott, in obtaining the high position of eighth wrangler in the recent Cambridge Mathematical Tripos has demonstrated the fact that, other things being equal, women are able to carry off some of the highest honors of the University. In the report of this examination it is stated that if women were not excluded from academic honors, three other ladies would have come out in the third class. It is further stated that some of the female students from Newnham, who were informally examined last autumn, were similarly successful. One lady got a first class place in the Moral Science Tripos, and two others a like position in the Historical Tripos.

The success of Girton and Newnham had its influence on Oxford, and two Halls for women were subsequently established there. This was followed by the opening of the London University degrees to women. At this point Lady Stanley of Alderley remarks:—

"It can scarcely be doubted that the earnest, thorough work done by the College, the admirable spirit and tone among the students, and the success achieved in passing the successive years, some of the most difficult examinations, have combined powerfully with the determined energy of the medical students to create that change in public opinion which made the action of the London University possible, and which reduced to mere questions of time any other measures that may yet be needed to open a full and free career of employment to women."

In order to supply the yet "missing link" in higher female education, a "National Union for the improvement of women's higher education" was formed. In 1871 a committee was formed to carry out the various schemes of this society. The Princess

Louise consented to be its President. The special object of the Union was to establish good and cheap schools for girls, above those attending the public schools, to provide means of training female teachers, and to promote higher education for those after school age. Complete success has crowned the efforts of the Union. In 1872 the "Girls' Public Day School Company" was formed. The first school was opened in 1873. Now there are seventeen large and successful schools in operation, with an attendance of about 3,000 girls. It is expected that soon there will be a school of this kind in nearly every town in England. Those established are periodically inspected (as this is their life). Examinations are held by the Universities' Board, and a good number of pupils have passed with credit the Oxford and Cambridge local examinations.

The last step taken was to establish a medical school in 1874 for women. Arrangements were made for instruction to be given to the students in the wards of the Royal Free Hospital. Nineteen British and two Irish medical examining bodies are now enabled to confer licenses or medical degrees upon women.

Thus we see that in every department of female education satisfactory provision has been made in England for it.

#### CHANGES OF TEXT-BOOKS IN NOVA SCOTIA.

We learn from the last Annual Report of Rev. Dr. Allison, Chief Superintendent of Nova Scotia, that the Council of Public Instruction for that Province has been giving a large amount of careful attention to the subject of school text-books, during the past year. The fundamental principle adopted by the Council was that only one text-book should be authorized for each subject. The list is not yet fully completed, except the Mathematics and Science. In these departments, the Ontario text-books by Hamblin Smith and Kirkland and Scott have been authorized for exclusive use after October. Dr. Allison and the Council of Public Instruction are to be congratulated on the success attending their labors. They have not only secured an admirable set of text-books in the subjects mentioned, but their course has received the hearty endorsement of the teaching profession throughout the Province, as may be learned from the very practical reports from the Inspectors, which form a large and valuable appendix to the Chief Superintendent's Report.

The Rev. Dr. Allison refers to the subject as follows in his Report:—

"In my Report of last year I mentioned, as grounds upon which the necessity of a revision rested, 'the necessary multiplication of books in some branches of knowledge, the total lack of prescribed texts in others, and the admitted unsuitability of some of the authorized works.' During the year, the subject has received much painstaking consideration from the Council of Public Instruction. In some subjects, definite results are yet to be announced. In Mathematics and Science a simple and comprehensive list of texts has been prescribed, authorized for use immediately, and required to be used after the close of the current year in October. While I regret any inconvenience and expense entailed by this revision, I am convinced that, on the whole, great economic as well as educational gain will result therefrom."

We wish the Council of Public Instruction and Dr. Allison success in dealing with the other subjects of the school programme.

RECENT GEOGRAPHICAL NOTES.

ARCTIC EXPLORATION OF THE NORTH EAST PASSAGE.

Although arctic exploration in the direction of the north west passage has been a favorite yet comparatively fruitless enterprise for many years, it was not until last year that a successful exploration of the north east passage to Asia was made. Explorations in this direction had for three centuries proved abortive, so that the first successful one was made by the Swedish ship *Vega*, under the command of the energetic explorer, Prof. Nordenskiold. He completed the memorable voyage during the months of July, August and September of last year—a voyage which Capt. Markham says will always rank as one of the greatest geographical feats of the present century. The commander of the *Vega*, after careful study of currents and the movements of ice in these seas, and two test voyages in 1875 and 1876, at length succeeded in making the famous passage from the Atlantic to the Pacific Ocean around the Northern part of Europe. He also succeeded in opening up the Siberian coast and rivers to civilization and commerce. On the 5th of August last Prof. Nordenskiold reached the mouth of the Yenisei river, and on the 19th of the same month the first keel (as Capt. Markham says) made by human hands, cleft the sea round the most northern point of the old world." This was Cape Chelyuskin—the *Promontorium Topin* of Pliny—found to be in North latitude 77° 41'.

Another notable voyage in this direction was made last year by the Dutch schooner *Willem Baren's*—so designated in honor of the Dutch navigator of that name in 1594. This schooner succeeded in reaching the hitherto inaccessible shores of Franz Josef Land, lying three degrees north of Novaya Zemlya (or Nova Zembla). The only other vessel which approached the inhospitable coast was the Austro-Hungarian exploring ship *Tegetthoff*, which drifted there in the ice in 1872-3, in which she was hopelessly beset, and from which she was never extricated, but had to be abandoned by her heroic crew. The geographical importance of this feat of the *Willem Barents* cannot be too highly estimated, as it has disposed of many knotty points in North Eastern Arctic Navigation. It is expected that it will greatly facilitate the scientific exploration of the polar sea and area, and thus solve many doubts and surmises of navigators in arctic waters.

As it may be interesting to our readers to know something of the prospects of exploration in this new field, we shall devote the next geographical paper to this subject.

**SPELLING REFORM.**—Dr. J. A. H. Murray, President of the Philological Society, writing to a member of the English Spelling Reform Association, says:—"As to practical measures, I strongly approve of gradual steps. If spelling reformers will agree on a list of immediate changes, and pledge themselves to use them *whenever they can*, I will join them in doing so. If some hundreds of men will do this, it cannot be laughed down. I would have a list drawn up of words on which there would be a general agreement, excluding for the present *all* doubtful words, but including all those like *hav, giv, catalog, tung, det,*

*dout, coud, soverin, lovd, prest, decht*, whose superfluous letters are both *unphonetic* and *unhistoric*, in order to make a beginning, and in fact to make the matter a practical one, so that people would be forced to say, 'Some people spell this word so and so: I think theirs is a better way.'

—We copy the following statistics relating to the schools of England and Wales from the *Schoolmaster*:

The grants for day schools amounted to £1,999,929 5s. 8d., an increase on the previous year of £188,281 15s. 4d.; for evening schools, £22,540 13s. 1d., a decrease of £1,585 6s. 11d.; payment of Honours' fees, £7,521 19s. 11d., an increase of £4,888 7s.; grants to School Boards, £1,070 10s. 8d., an increase of £258 0s. 4d.; grants towards building and furnishing school premises, £8,059 14s., a decrease of £986 16s. 8d.; grants to training colleges, £105,441 0s. 11d., an increase of £1,900 2s. 10d.; pensions to teachers, £4,786 14s. 3d., an increase of £2,117 18s. 7d.; administration, £179,408 13s. 6d., an increase of £6,989 3s. 2d.; organisation of districts, etc., £800 13s. 10d., a decrease of £204 0s. 8d. The total is £2,828,998 5s. 4d., and the increase as compared with the previous year £151,568 18s. 10d. Classified according to denomination of the recipients, the following is the result:—Schools connected with the Church of England, £1,178,281 17s. 9d., an increase of £44,866 18s. 6d.; British, undenominational, and other schools, £208,891 10s., an increase of £6,025 1s. 4d.; Wesleyan schools, £106,086 1s. 10d., an increase of £4,402 7s. 4d.; Roman Catholic schools, £112,276 8s. 8d., an increase of £2,780 18s. 11d.; Board schools, £588,067 14s. 2d., an increase of £86,500 19s. 6d. The number of certificated teachers actually engaged in teaching was 80,128; assistant teachers employed under Article 79 of the Code, 6,615; assistant mistresses, 2,124; pupil teachers under apprenticeship, 80,478. The salaries of 124 masters principally in Church schools were under £50 per year, and 187, of whom 49 were Board, and the rest Voluntary, received over £800. The number of schools inspected by Her Majesty's Inspectors was 17,166, in which accommodation was provided for 4,142,224. The number on the registers was 8,710,888, of whom 8,122,672 were present on the day of inspection. The average attendance was 2,594,995. The total expenditure of schools for the complete year was £4,778,824. The expenditure per scholar in average attendance in schools connected with the National Society or the Church of England was £1 14s. 7½d.; in Wesleyan schools, £1 14s. 5½d. per head; and in School Board schools, £2 2s. 0½d. per head, or an average on all schools of £1 16s. 5d. The amount received from school pence was no less than £1,849,297 paid by scholars and £28,066 paid by guardians. Of 1,760,040 scholars presented for examination in Standards 1 to 6 inclusive, 968,881 were in schools connected with the National Society and the Church of England, and 446,810 in Board schools. The percentages of passes in reading were—in National schools, 87·08; in Wesleyan, 88·1; in Roman Catholic, 89·74; in British, 88·56; and in Board, 87·66. In writing the percentages were for the same—78·81, 80·72, 81·86, 80·83, and 82·18; and in arithmetic—71·98, 75·60, 78·76, 75·7, and 77·4.

—The following information relative to teachers' salaries in Scotland will prove interesting. It will be necessary to remember that most masters have residences as well:

	Rate of Grant.	Rate of Expenditure	Average salary—	
			Masters.	Mistresses.
Public Schools.....	£0 17 1½	£2 8 6½	£187 17 1	£70 5 1
Church of Scotland do.....	0 17 7½	2 1 11½	164 17 1	84 14 0
Free Church do.....	0 16 1	2 1 1½	141 0 11	77 18 7
Episcopal Church do.....	0 14 9½	1 13 8	127 12 11	70 4 4
Roman Catholic do.....	0 15 0½	1 11 11½	183 18 8	78 11 4
Other do.....	0 16 11½	2 1 2½	144 6 4	75 4 10
<b>Net Average.....</b>	<b>£0 16 11</b>	<b>£2 2 1½</b>	<b>£139 3 0</b>	<b>£72 6 4</b>

—It is understood that the Hon. Adam Crooks, Minister of Education, has left for England to secure a Professor for the

vacant chair of Classics in Toronto University. Great credit is due to the Minister for the good service already done in securing for the University Professors Wright and Loudon, who have proved themselves well qualified for the high position in which they have been placed. It is to be hoped that he will be equally successful in the choice he is now about to make.

—The English educational journals strongly urge the teachers to take concerted action in relation to the elections about to take place. It is proposed to select a teachers' candidate, and a subscription is set on foot to raise £1,000 to pay the expenses of his election.

### Contributions and Correspondence.

#### PUBLIC SCHOOL EDUCATION IN MANITOBA.

BY REV. W. CYPRIAN PINKHAM, CHIEF SUPERINTENDENT.

The system of public education which was inaugurated in 1871 is becoming year by year of greater value to the country. Considering all that the Province has suffered from the repeated grasshopper visitations, and the difficulty of obtaining funds from a population, many of whom found the resources at their disposal for establishing themselves in a new country very limited indeed, it is really surprising that the organization and support of schools should have received such a large share of attention, and that the educationists in Ontario should be able to say of a system which has been scarcely nine years in operation: "So far as public school education is concerned, the residents of Manitoba can obtain in the towns and villages, and in many of the rural districts, quite as good advantages for their children as in many of the older provinces." It is a most gratifying fact that, as soon as they become established in their prairie homes, our settlers almost invariably set about the organization of school districts and the establishment of schools, and the result is that schools are now in operation in townships which two or three years ago were without a settler, and much of the land in which is still wild. Visitors to the capital of the Province are struck with the imposing appearance which our school buildings make, and to the credit of the city trustees it must be said that they are leaving no means untried for securing the utmost efficiency in the various schools under their jurisdiction.

The body entrusted with the administration of the Public School Act is the Board of Education. The Board consists of twenty-one members appointed by the Lieut.-Governor-in-Council, viz.: twelve Protestants and nine Roman Catholics. The appointments are for three years, provision being made for the retirement of seven members each year, who, however, are eligible for re-appointment. The Board is empowered to resolve itself into two sections, consisting of the Protestant and Roman Catholic members respectively. Each section has one of its members for its executive officer, with the title of Superintendent. It has the entire management of all the schools of its denomination throughout the Province. It makes all necessary arrangements for the grading and licensing of its teachers, and for the withdrawal of the licence upon sufficient cause. It selects all books, maps, etc., to be used under its jurisdiction, and has power to appoint inspectors, to define their duties and provide for their remuneration. The organization of school districts and the opening of schools rests practically with the people directly interested. The Board of Education has invariably given the utmost encouragement to settlers desirous of

establishing schools, and information as to the steps to be taken can at all times be obtained from the Superintendent. After the formation of a school district the freeholders and householders meet at the call, by printed notice, of the Superintendent, for the purpose of electing three trustees, who thus become the guardians of the educational interests of the district—to appoint auditors, and to vote the sum of money to be raised by assessment on all the real and personal property in the district to supplement the Government grant. This grant amounts now to a little over one hundred dollars per annum to each school carried on for the full twelve months. The meeting can, if it pleases, authorize the trustees to borrow a certain amount of money for the erection of a school house, etc. At the annual meeting, which takes place on the first Monday in February in all the school districts in the Province, the trustee whose term of office has expired retires, and there is a new election to fill his place; the retiring trustee is eligible for re-election. After the first meeting, ratepayers only, i. e., persons residing in the district and who have paid their school tax for the previous year, are entitled to take part in the proceedings or to be elected as trustees. If such meeting refuse to vote a sum of money to carry on the school, no school can be opened that year, unless a motion to raise money be adopted at a subsequent meeting. The powers and duties of trustees are clearly defined by statute. The Protestant section of the Board of Education, in its programme of examination for teachers, adopted a pretty high standard. Its examiners are professional men of high standing in the province, almost all of whom have been at some time or other engaged in teaching. Its teachers bear excellent moral characters, have as a rule a high sense of duty, and seem most anxious to come up to the standard which our modern ideas require in the profession.

At the present time there are nearly 120 Protestant school districts in the Province, and this number will in all probability be doubled within the next two years. The following summary shows the number of Protestant schools in operation each year since Confederation:—

Year.	No. of Schools.	Total Attendance.
1871	16	816
1872	17	1095
1873	17	1108
1874	22	1248
1875	26	1595
1876	30	1660
1877	38	2027
1878	50	2670
1879	100	

The experience of each year brings to light defects in our system, and discloses circumstances not as yet provided for; but as we look back over the past, we cannot help feeling grateful for the measure of success which has been granted to us.

#### HOW TO PRONOUNCE "MUSA."

To the Editor of the Canada School Journal.

This is not intended as a quaint title for an article on the pronunciation of Latin. Concerning the relative merits of the English and continental methods I offer no opinion. My purpose is simply to discuss the pronunciation of the *ablative singular* of an ordinary noun or adjective in the *First Declension*.

Throughout the Maritime Provinces, so far as my observation has extended, the English mode of pronunciation generally prevails; and to this mode my remarks have reference. It has come to my knowledge in various ways, during the past fifteen years, that many teachers of Latin, including College Professors, have been in the habit of teaching or allowing students to pronounce the class of words mentioned in a manner that is entirely unwarranted and incorrect. While the nominative case is pronounced

by all alike—*musā, togā, stellā, Ossā, etc.*—the ablative case is called *musay, togay, stellay, Ossay, etc.*

When asked why this difference is made between the two cases, these teachers invariably say "Because the final *a* is long in the one case but short in the other." That there is a mistake here will be evident from the following considerations :

1. The one *a* is long and the other is short in "quantity," not in sound. The quantity of a syllable is said to be "the relative time occupied in pronouncing it." In our modern speech, at least in English, accent has taken the place of quantity. The so-called "long" and "short" sounds of the English vowels have no direct relation to the long and short quantities in Latin.

2. If vowels that are long in quantity are necessarily to receive the long sound, then *regnis* must be pronounced "reg-nice," and *edax* must be made to rhyme with "head-aches."

3. The rules for the pronunciation of such a word as *musā* are clearly laid down in some grammars. Thus Andrews and Stoddard, a good authority, gives the following :

"(1) In words of two syllables, the penult is always accented; as *pū'ter, pen'-na.*

"(2) *A*, at the end of an unaccented syllable, has nearly the sound of *a* in *father* or in *ah*, but less distinct and prolonged; as *mu'-sa, epis'-tōla*; pronounced *mu'-zah, etc.*"

4. It is quite unnecessary to give different sounds to the vowels in order to distinguish one case from another; otherwise let us make a distinction between the dative and ablative plural, and still more between the ending of the genitive singular in the Third Declension, and the dative or ablative plural in the Second.

5. Many persons never think of pronouncing the final *a* of the ablative singular, First Declension, like *ay* in *day*, except in declining a word, in which case they also misplace the accent and say—

mu-zah' instead of mu'-zah.  
 mu-zee' " " mu'-zee.  
 mu-zam' " " mu'-zam.  
 mu-zah' " " mu'-zah.  
 mu-zay' " " mu'-zah.

A NEW BRUNSWICK TEACHER.

To the Editor of the Canada School Journal.

SIR,—I have received a note from a teacher asking me how I would read the first verse of the first chapter of John, with the request that I would reply through the SCHOOL JOURNAL. "In the beginning was the Word, and the Word was with God, and the Word was God." The common method of reading this passage is the right one, on the following analysis: 1st. Say *what* was in the beginning—the *Word*. 2nd. Say *where* it was, how associated—with *God*. 3rd. Say *what* that word was—*God*. 4th. Say (verse 2) *when* it was—in the *beginning*. This reading is supported by the authority of Rev. J. H. Howlett, Reading Chaplain of H. M. Chapel, Whitehall, and author of "Instructions on Reading the Liturgy," and is in strict accordance with the commentaries of Barnes, Scott and others on the passage. The Evangelist first announces *what* was in the beginning, then that it was united *with* God, and as a climax of this great announcement that it *was* God himself. But lest his evangel in all its grand announcements should be misunderstood, he adds, in the second verse, that "the same was in the *beginning*." My correspondent states that he had been led to understand that he should emphasize "beginning" in the first verse, and emphasize "word" and not "was" in the third clause. But the emphatic statement of the second verse shows that John's first important announcement was that the *Word* was in the beginning, and that the *Word* not only was *with* God, but *was* God himself, crowns the statement. This is the general way of reading the verse, and it is based upon a common-sense view of the passage. I have marked it as it is and should be read.

R. LEWIS.

WHAT MAKES THE ROWDIES.

To the Editor of the Canada School Journal.

On a scrap of paper which has served to wrap a mailed school periodical, my eye was caught by this paragraph :

"So long as we allow our public meetings, our lectures, our

church gatherings, to be annoyed, disturbed, and made unendurable by hoots, whistles, cat-calls, and general rowdyism; so long as we allow our nights to be made hideous by gangs of young men racing and howling in our streets, so long may we expect our school will be disorderly and unsatisfactory. But when our city governments shall see that order prevails on our streets at night and day; when our churches and Sunday schools shall determine to have and enforce good order; when we can have a public lecture in either hall or church, at which there shall be no ruffianism; when, in short, our public will so respect themselves as to compel others to respect their rights; whenever and wherever this state of affairs exists, then and there can be had a good, successful, and orderly school, and genteel, orderly pupils will go trooping home quietly and without carrying off any one's gat. The best teachers in the world cannot do it without the co-operation of the people."

This is a frightful picture of a wretched state of society, in which expenditure and loss must ultimately eat up all means, and prosperity cannot be secured,—to say nothing of comfort.

But is it the rowdyism that spoils the usefulness of the schools, or was it ineffectiveness in the schools that first permitted or caused the development of the rowdies? For these are like the fungoid growths of blight and mildew which sometimes devastate the gardener's crops. If he has been vigilant and industrious to keep up a vigorous growth, the leaves of his vines remain bright and healthy; they throw off the spores from which the fungi grow. Is it not so in the schools? Children naturally love to learn, and to learn with others in emulative squads. If they get some fresh knowledge every day, of a kind that satisfies their desire, and leads them to anticipate the next point which is to be shown to them to-morrow, they will prefer the school to the street; especially if the room is bright and neat and comfortable. There will be no street school to go to, because none of the children will be idle or demoralized.

Instead of the compulsion which is a hard necessity in the case of the hopelessly depraved, let early measures of PREVENTION be put into immediate effect. Choose for the primary school the most winning, most steady, most tactful and expert of the whole corps of teachers; and let the next best be placed in charge of the next grade, and so on. Give a tithe of the cost of patrol and prosecutions, to supply these schools with all needful means and conveniences. Visit the busy little midgets, who will be delighted to see that their doings are noticed, and who will read to charm you, and do slate work to astonish you, if you only give them and their teachers countenance and chance. And so your future community will be saved from blight.

W.

Mathematical Department.

Communications intended for this part of the JOURNAL should be on separate sheets, written on one side only, and properly paged to prevent mistakes. They must be received on or before the 20th of the month to secure notice in the succeeding issue, and must be accompanied by the correspondents' names and addresses.

UNIVERSITY OF LONDON (ENG.).

MATRICULATION, JANUARY, 1880.

ARITHMETIC AND ALGEBRA.

TIME—THREE HOURS.

Examiners—Dr. John Hopkinson, M.A., F.R.S., and Rev. Prof. Townsend, M.A., F.R.S.

1. From  $\frac{1}{100}$  of  $\frac{1}{2}$  of  $\frac{1}{20}$  of a mile subtract  $\frac{3}{4}$  of  $\frac{1}{2}$  of a foot, and express the result in metres. (One metre may be taken as 39 $\frac{3}{8}$  inches.)
2. Multiply 0.0316228 by itself, giving the result correctly to six significant figures.
3. Obtain the square root of 0.03456789 correctly to seven places of decimals.
4. Find the product of 0.538461 and 0.3285714, reducing the result to a vulgar fraction expressed in its simplest form.
5. Given that a gallon of water weighs 10 lbs., that a cubic foot of water weighs 1000 ounces, and that a litre is a cubic decimetre; find how many litres there are in a gallon.
6. Find *r* and *s* in terms of *a* and *b*, *p* and *q*, so that  $x^4 - px^2 + qx^2 + rx + s$  may be divisible by  $x^2 + ax + b$ , whatever *x* be.

7. Solve the simultaneous equations

$$\frac{1}{2}x + y + 7z = 41; \quad x + \frac{1}{2}y + 7z = 42; \quad x + y + z = 15.$$

8. Reduce

$$\frac{x^4 + a^2x^2 + a^4}{x^2 - a^2} \times \frac{x+a}{x^2 + ax + a^2} \div \frac{x^2 - ax + a^2}{x+a} - \frac{x^3 - a^3}{x^2 + a^2} \times \frac{x^2ax + a^2}{x-a}$$

$$\times \frac{x+a}{x^2 + ax + a^2} \text{ to its simplest form.}$$

9. A milkman has three cans of 10, 7, and 4 quarts respectively; the first is full, the other two are empty: he is required to divide the ten quarts into five quarts in the ten-quart can and five quarts in the seven-quart can. How will he do it?

10. Three numbers are in geometrical progression, the sum of the first and third exceeds the double of the second by unity; and if from the difference of the first and third one be taken, the result is one-third of the second. What are the numbers?

11. A agrees to pay B a total sum of £300, in three instalments of £100, at the end of one, two, and three years respectively. He fails to make any payments, and at the end of four years B demands payment. Reckoning compound interest at 4 per cent., how much should B receive?

12. Assuming, for the purpose of this question, that a full-rigged ship has 40 hands, a schooner 15, and a steamer 10; on a certain day 36 vessels, all either ships, schooners or steamers, arrived in port: they had, in all, 750 hands; the hands on board the ships would be just numerous enough to man all the schooners and twice as many steamers as arrived that day. How many of the vessels were ships, schooners, and steamers, respectively?

#### SOLUTIONS.

1. 1 metre.

2. .0010000. Use abridged method.

3. .1859244. Shorten work by following rule: in finding the square root of a number, when  $n+1$  figures of the root have been obtained,  $n$  more may be obtained by simply dividing the last remainder by the last trial divisor. Thus in the present example 7 figures are required. The first four, .1859, are found by the ordinary process; and then the division of the remainder 90800..... by the trial-divisor 37182, will give correctly three other digits, 244. See Colenso's Algebra, Pt. II., § 18.

4.  $1\frac{3}{8}$ .

5. 1 gallon weighs 160 oz.; 1 cub. ft. weighs 1000 oz.; ∴ 1 gallon =  $\frac{160}{1000} \times 1728$  cub. inches. Also 1 litre =  $\left(\frac{315}{80}\right)^3$  cubic inches, from

Ex. 1. Hence one gallon contains  $\frac{160}{1000} \times 1728 \times \left(\frac{16}{63}\right)^3 = 4.53$  litres nearly.

6. Let  $x^2 + cx + d$  be the factor; the product  $(x^2 + ax + b)(x^2 + cx + d)$  must therefore be *identically* equal to  $x^4 + px^3 + \dots$ . Multiplying out, and equating coefficients of  $x$  we have

$$q = b + d + ac$$

$$p = a + c$$

$$r = ad + bc$$

$$s = bd.$$

From first two  $c = p - a$ ,  $d = q - b - c$  ( $p - a$ ). Substituting in third and fourth  $r = a^2 - a^2p + a(q - 2b) + bp$ ,  $s = ab(a - p) - b(b - q)$ .

7.  $x = 7 = z = 5$ .

8.  $1 - 1 = 0$ .

9. The simplest solution of the indeterminate equation  $4x + 7y = 5$ , is  $x = 8$ ,  $y = -1$ . Hence, evidently, if the milkman can succeed in filling the four-quart can three times, and, from the milk so put in, can manage to fill the seven-quart can once, he will have accomplished the required division; the method of doing this is sufficiently straightforward.

10. Let  $x, y, z$  be the numbers. Then  $x + z = 2y + 1$ ,  $z - x - 1 = \frac{1}{2}y$ ; also  $x = y^2$ . From the first two equations  $6x = y$ , and  $3z = 4y + 3$ ; substituting these values of  $x$  and  $z$  in the third equation we get  $y = 6$ ; thence  $x = 4$ ,  $z = 9$ .

11. Amount =  $100\{(1.04)^3 + (1.04)^2 + (1.04)\} = \text{£}324.6454$ .

12. Let  $x, y, z$  be the number of ships, schooners and steamers respectively.  $x + y + z = 36$ ,  $40x + 15y + 10z = 750$ ,  $15y + 20z = 40x$ . Whence  $x = 11$ ,  $y = 12$ ,  $z = 13$ .

#### GEOMETRY.

TIME—THREE HOURS.

Examiners—Dr. J. Hopkinson, M.A., F.R.S., and Rev. Professor Townsend, M.A., F.R.S.

[Candidates are at liberty to use all intelligible abbreviations in writing out their answers.]

1. Two finite right lines, of any lengths, being supposed to radiate, in any directions, from a common terminal point; show that the angle they determine is equal to that determined by their two productions through the point.

2. Two rectilinear segments, of any lengths, being supposed to have a common middle point, but not a common direction; show, assuming the preceding property, that they are the two diagonals of a parallelogram.

3. Two triangles, having a common base, being supposed to have their two vertices on a common parallel to the base; show that the four parallelograms, on the same base, having their four sides for diagonals, are equal in area.

4. By aid of the preceding, or otherwise, construct, on a given base, a triangle of given area, having its vertex on a given indefinite right line not parallel to the base; and determine the number of solutions.

5. Two chords of a circle, intersecting at a point within the circumference, being supposed to make equal angles with the line connecting the point with the centre; show that the two segments of either are equal to the two segments of the other.

6. By aid of the preceding, or otherwise, construct an isosceles triangle of given vertical angle, having its vertex at a given point within a given circle, and both extremities of its base on the circumference of the circle; determine also the number of solutions.

7. A quadrilateral, of the ordinary form, being supposed inscribed in a circle; show that the sum of either pair of its opposite angles is equal to the sum of the other pair.

8. The quadrilateral, in the preceding property, being supposed to be a parallelogram; show, as a consequence from the property, or otherwise, that its two diagonals pass through the centre of the circle.

9. A quadrilateral, of the ordinary form, being supposed circumscribed about a circle, show that the sum of either pair of its opposite sides is equal to the sum of the other pair.

10. The quadrilateral, in the preceding property, being supposed to be a parallelogram; show, as a consequence from the property, or otherwise, that its two diagonals pass through the centre of the circle.

11. Divide a given finite right line into two unequal segments, so that the rectangle contained by the whole line and the lesser segment shall be equal to the square of the greater segment.

12. By aid of the preceding or otherwise, construct, on a given base, an isosceles triangle, each of whose base angles shall be double of its vertical angle; and complete, by aid of it, the construction of a regular pentagon on the base.

[Examiners in Canada would do well to mark the custom indicated by the note at the commencement of this paper. The custom of varying the wording of familiar propositions is also an excellent one; the examiner has then some assurance that candidates will not recognize the propositions merely by the jingle of words.]

#### SOLUTIONS.

1. Prop. 15, Bk. I., Euclid.

2. Joining the extremities of the line, we find we are asked to prove the converse of the problem,—the diagonals of a parallelogram bisect each other.

3. Establish Prop. 35, Bk. I., Euclid, under which the problem is an example.

4. From the preceding it follows that triangles on the same base and between the same parallels are equal. On both sides the given base let there be triangles of the given area. Through their vertices draw lines parallel to the base; the points where they intersect the given line, when joined to the base, will give the triangles required, two in number.

5. If  $A$  be the given point, and  $O$  the centre of the circle, and  $OB, OC$  be perpendicular to the chords, it may readily be shown that  $AB$  and  $BO$  are equal to  $AC$  and  $CO$ . Hence the chords, being at equal distances from the centre, are equal; also  $AB=AC$ , whence, &c.

6. Join the given point to the centre, and on each side of the joining line make angles equal to half the given angle. Two solutions.

7. In effect Prop. 22, Bk. III., Euclid.

8. The angles are readily shown to be right angles, and thence all segments of diagonals are equal; hence point of intersection must be the centre.

9. Readily follows from fact that tangents from same point to same circle are equal.

10. It follows from preceding problem that such a parallelogram must be a rhombus. Hence a diameter bisects the angle between two tangents to the circle, and therefore passes through the centre.

11. Prop. 11, Bk. II., Euclid.

12. With the ordinary figure and lettering of Prop. 11, Bk. II., Euclid,  $CA$  being the given line, the proposition enables us to produce it to  $F$ , so that  $CF, FA=CA^2$ . Accordingly on the given base  $CA$  construct an isosceles triangle with sides equal to  $CF$ , and employ the proof of Prop. 10, Bk. IV. Prop. 11, Bk. IV., enables us to construct the pentagon.

Solutions of the following are asked for:

1.  $\sqrt[3]{a+x} + \sqrt[3]{a-x} = b.$

C. E. K.

2.  $x^2 + \sqrt{x} = a.$

3.

$$\begin{cases} x^2 - yz = a^2. \\ y^2 - xz = b^2. \\ z^2 - xy = c^2. \end{cases}$$

4.

$$\begin{cases} x^2 + y = a. \\ y^2 + x = b. \end{cases}$$

D. J. S.

5.  $A, B, C$  and  $D$  run a race over a mile course. First  $A$  and  $B$  race, and  $A$  beats  $B$  by 20 yards; next  $C$  and  $D$  race, and  $C$  beats  $D$  by 60 yards. Then  $A$  and  $C$  race; which will win, and by how much, supposing that  $D$  could beat  $B$  by 40 yards if they were to race?

S. H. P.

Teacher sends a solution of the "contract" problem solved in the February issue. I think he assumes that the boys and men determine the price of their labor not by the work they do, but by the amount the contractor receives, the former saying that they must get half as much as the contractor, and the latter twice as much. He obtains for answer \$5250. We prefer the solution that appeared last month, the interpretation there of the words of the problem appearing more natural.

W. J. Harrington, Emily, Victoria, sends the following solution of the "interest" question of last month:

Int. on \$10,000 for 6 months at 5 p. c. = \$250.

Int. on \$1 given for 6 mos. = 2½ cts.

" " 2nd = " " 5 " = 2½ "

" " 3rd = " " 4 " = 1½ "

" " 4th = " " 3 " = 1¼ "

" " 5th = " " 2 " = ¾ "

" " 6th = " " 1 " = ½ "

Total given \$6.00

Int. = 8½ cts.

Then to get \$1.00 monthly requires \$6.08½ at end of 6 months. Hence

\$6.08½ gives \$1.00 monthly.

$$\therefore \$250 \times \frac{\$1.00}{\$6.08\frac{1}{2}} \times 250 \text{ monthly} = \$41.067.$$

It will be observed the result is almost identical with our own, though the methods are quite different.

Mr. L. E. Newcomb, of Alma, N.B., has forwarded the following excellent solution of Problem 4, January issue:—If  $A, B, C$  be the centres of the circles whose radii are 100, 20, 40, respectively, the locus of the centres of circles touching the circles at  $B$  and  $C$  will be an hyperbola, whose foci are  $B$  and  $C$ , transverse axis  $a = \frac{1}{2}(40-20)$ , distance of foci from centre of curve  $ae = \frac{1}{2}(240)$  and conjugate axis  $b = \sqrt{a^2e^2 - a^2}$ . Hence its equation referred to  $B$  as focus and  $BC$  as initial line will be

$$r = \frac{b^2}{a + ae \cos \theta}$$

Similarly the equation to the locus of centres of circles touching those at  $A$  and  $B$  will be

$$r' = \frac{b'^2}{a' + a'e' \cos \theta'}$$

The centre of the required circle will be the intersection of these curves, at which point  $r = r'$  and  $\theta + \theta' = ABC$ . From these equations  $r$  is found, and thence the diameter of the required circle, which Mr. Newcomb finds to be 254.773 ft.

Mr. Park sends the following answers to his problems in last number: (1) S. Lat.  $46^\circ 48'$ , Long. =  $160^\circ 29' 30''$ . (2) Rt. Ascen. =  $49^\circ 19'$ , Dec. =  $15^\circ 59' 30''$ . (3) Obliquity of ecliptic =  $23^\circ 28'$ , Long. =  $73^\circ 55'$ . (4) Dis. bet. centres =  $112^\circ 53' 30''$ .

ANSWERS TO CORRESPONDENTS.

YOUNG TEACHER.—A so-called Arithmetical solution, if found, will be an Algebraic one disguised. In reference to your second question: From the ends of the 275 side drop perpendiculars  $y$ ,  $y$  on the 385 side, and let  $x$  be one of the segments of this side between its end and the foot of  $y$ ; then  $110-x$  is the other. Hence  $x^2 + y^2 = (155)^2$ ,  $(110-x)^2 + y^2 = (125)^2$ . Eliminating  $y^2$  we have a quadratic to determine  $x$ . Thence  $y$  is found.

T. R. B.—The solution of your problem will be obtained by remembering that the line joining the bisections of the sides of a triangle is parallel to the base.

M. W.—Denote the first number briefly by  $abcde$ , and therefore the second by  $abcde1$ . Then

$$\frac{abcde}{1} = abcde1$$

It will be observed that when the nine digits are multiplied by 8, each gives a different digit in the units place. Hence  $e$  must be 7. 2 is carried, and therefore  $d$  multiplied by 3 gives 5 in the units place, and  $d$  must be 5. Similarly the other digits may be obtained. (Prob. 61, page 163, H. Smith's Algebra.)

J. T. H.—The solution of your problem will be found in our issue of November, 1879. The condition is that the opposite angles of the quadrilateral shall be together equal to two right angles.

D. J. S.—The character of the problem seems to forbid what you call an arithmetical solution. However, such enquiries are extremely unprofitable. The object of employing an elementary method should be in the main to simplify a process; here it would certainly complicate it. We would prefer spending our time in solving "14, 13, 15."

In the first question you propose you say "Examination Papers," without indicating which you mean. Please send the problem.

## Practical Department.

### ELOCUTIONARY STUDIES.

BY RICHARD LEWIS, PROFESSOR OF ELOCUTION, TORONTO.

The study of a composition for oral delivery demands intellectual and physical qualifications. The first involves a thorough comprehension of every thought in the passage, and a vivid and true conception of the spirit and character of the entire subject. The second demands a trained voice and ear. It is essentially and exclusively physical, and without its functions the highest development of the first qualification will fail in making the voice the interpreter of thought and passion. The common mistake that teachers and authors make in their views on the subject is that if you understand what you read you can read it well; and the fact that university educated men, with the highest learned titles, are often the very worst readers and speakers, ought to silence the false doctrine for ever. The trained voice and ear are indispensable, and though all human beings are amply gifted with these physical qualifications in infancy, the utter absence of training in education and the influence of surrounding bad habits, make the acquisition of skill and excellence in this department most difficult. Inexperienced teachers supply fanciful theories in abundance. They lay down rules for expression; but the rules are worthless, are unintelligible when the pupil has no control over the voice, nor ear to distinguish its modulations. If the pupils of our schools never received a single rule for reading, vocal drill would accomplish almost all that was necessary when guided and pervaded by common sense and the exercise of imagination.

As I purpose submitting a series of papers as aids to elocutionary study, I therefore urge on my readers the immense importance of this voice and ear culture. Much of what I advance *must* be theory. I cannot give the vocal example in a printed article. But when the student has full mastery over the organs or delivery, then the elocutionary study is edifying, entertaining, and delightful. Then intellect and imagination can guide and govern and exalt expression, and make uttered speech represent artist, poet, and historian, realizing, interpreting, and in very truth creating in life-like forms of power and beauty, what mind has conceived and garbed in silent words.

I select for our first study *Parrhasius*, because it is essentially dramatic, picturesque, and imaginative, and, being in the Fifth Reader, available in our schools.\* The opening scenes are admirably and dramatically depicted. The reader with a very slight effort of imagination can conceive and realize to himself the "gray-haired captive chained to a pillar;" his weariness and silent grief, the insolence and scorn of heartless spectators. This must be realized to the mind and read in tones modulated in harmony with each picture as it rises in the mental vision and pervaded by the spirit which sympathises with suffering and hates injustice. Yet in the mere narrative there must be the dramatic power. The very spirit with which the "Jew taunted him," "the buyers struck him," and "the soldiers smote him with threats of torture," must be conveyed by tones of voice expressive of these actions, yet softened by glimpses of that sympathy with his wrong which pervades the poem and must therefore control the reading.

But I must pass these pictures and that of *Parrhasius* gazing upon his grief, animated only by an artistic sentiment and ambition. Let us stand at the side of the painter in his studio, and the description of his appearance prepares the way for the delivery of the first outbreak of passion.

"His fine, earnest eye

*Flashed* | with a passionate fire."

The words "His fine, earnest eye" must be read in animated tones growing in power and finding their climax on "flashed," which is the leading word, and will have a better effect if thrown out quick and powerfully and with falling inflection.

"The quick curl

Of his thin nostril and his quivering lip

Were | *like the winged god's* | breathing from his flight."

This passage must be read in the same animated style, and the simile, as it illustrates the "quick curl of his nostril" and the "quivering lip," although it is superior to and elevates the literal passage, can only be a *truthful* illustration by being read faster and with more vivacity than the literal. The *nature* and not the *value* of the simile suggests the law of its delivery.

Now impersonation commences. The reader must now assume all the dramatic qualities necessary to realize natural expression. He must endeavour to conceive all the conditions of the scene and the feelings of the speaker. A brief pause after the delivery of the narrative passage will give effect to the words of *Parrhasius*; and in that pause the reader must endeavour to be the painter and give the command with "the quick curl of his nostril and quivering lip." Yet self-possession must never be forgotten. The reader becomes an actor, and the true actor under the most powerful feelings never forgets *himself*. He is at once the actor and the creation of the poet. Here then, while animated by the passionate fire of ambition, he reflects that he is in the presence of slaves, and must sustain the dignity of the master. Hence the fire is rather in his eye and countenance quivering with expressive emotion than in the voice. He affects a momentary calmness; but gradually the voice swells with fervid, but not loud and noisy, excitement as he finishes the first stanza.

"Bring me the captive—*now*,

My hand feels *skilful* and the shadows | *lift*

From my waked spirit | airily and *swift*;

And I could paint the *bow* (*suppressed excitement*)

Upon the bended *heavens*; around me *pláy* |

*Colours* of such *divinity* | to-day."

*Há* ! bind him on his *back* !"

This command is not given boisterously, but with the calmness that an anatomist would give his instructions when a subject for dissection was brought before him, and the outstretched arm descending and the hand prone would complete the picture. But the calmness passes into excitement, as the victim probably struggles, and the one overmastering desire to depict extreme agony under torture gives suppressed energy to the hurried commands that follow.

"*Look* ! as *Prometheus* in my picture here ?"

A momentary glance at the picture, supposed to be opposite to the painter and the attendants, and the hand rapidly uplifted, and the index finger hurriedly pointed towards the picture would be the appropriate action.

"*Quick* ! or he *faints* ! stand with the *cordial*  
*near*."

Each of the italicised words must be uttered rapidly with the explosive oratorical stress and "cordial" slightly prolonged.

"Now *bend* him to the *rack* !

*Press* down the poisoned links into his flesh,

And *tear* *AGAPE* | that healing wound afresh !"

Each of these commands is given with utter absence of feeling, pity or anger. It is the calmness of a cruelty of which the painter must be supposed to be utterly unconscious. Yet the suppressed energy of the impersonation should fill the hearer with horror, which becomes almost intolerable on the word "agape."

In the next stanza the painter is rapidly sketching the agonies of his victim, and carried away by enthusiasm for art and the

\* EXPLANATION OF MARKS.—Emphasise italicised words and give stronger emphasis to words in small capitals; (') rising inflection; (v) falling inflection; (|) pause; (—) longer pause.

splendid results of his experiment, the tones of the speaker grow into wild fervor.

"So! let him *writhe!* (*calmly uttered as if quite satisfied*).  
"How long will he live | thus?" Quick my good pencil, now!  
WHAT a fine *agony* | works upon his brow!

"*Há!* gray-haired and so strong!"

This line is equivalent to a question, "Art thou so strong?"

"How *fearfully* he stifles | that short moan."

This line is spoken low, the syllable "fear" being prolonged with tremulous stress. This delivery will prepare the hearer for the effect of the last line.

"*Gods!* if I could but *paint a dying groan!*"

Intense passion must mark the delivery of this line. "Gods" is uttered with startling effect, with the eyes and the right hand uplifted heavenwards. The emphasis on the succeeding words is difficult, and demands care. His ambition is not simply to "paint;" he can do that, but to paint a *dying groan*, and while the mechanical effort of giving adequate power to the voice is indispensable, it will only be mechanical if the reader fails in adequate conception. The true reader must possess and exercise the faculty of the poet and the painter. He must conceive by the strongest effort of his imagination the conditions of the event and the character, and he must depict them.

"Pity *thée?*"

The victim is here supposed to have ignored "pity," and the painter may be supposed to repeat the words either as an interrogative, as if he *did* feel momentary pity, or in mere mockery of the appeal. The last sentiment would be best expressed by a falling inflection, as "*Pity thée,*" and the first by a rising inflection.

"So I *dò;*"

"I *ptty* | the dumb victim at the altar."

This is uttered with a touch of softness in the voice; but in the next three lines intensity of voice and passion must mark the reading, the voice swelling in force with the excitement of ambition expressed in the last line:

I'd *rack* *thée*, though I knew |  
A thousand lives | were perishing in thine;  
What were *tèn thousand* | to a FAME like mine | like mine?

The three succeeding stanzas present no special difficulties except at the beginning of the first and the close of the last. The victim is supposed to utter "hereafter," and the painter repeats it as a question, slowly delivered, as if for a moment pondering its dread import. Then defiance.

"Ay *hereafter.*"

In the last passage of the third stanza the voice again swells into force with excited passion rising to a climax of supreme defiance of all consequences, the face turned upward and the extended arm thrown out and heavenward on the last line.

"And though the crown of flame  
Consumed my brain to *ashes*, as it won me,  
By all the fiery *stars*—I'd *pluck* it *òn* me!"

In the next stanza passion must still burn vividly. In the expression, "My heart's last fount," there is a mingled feeling of tenderness and resolute cruelty. The appropriate action would be to press the heart with the right hand; and on the word "throat," where the conflict of these feelings is strongest, the right hand slightly grasping the throat, as if with a *chokir* sensation, would indicate the mental agony, expressed with fiercer energy on the last line.

"*All!* I would do it *àll*  
Sooner than *dié* like a *worm* to *rót!*  
Thrust foully into earth | to be *fórgot!*"

These last two lines end with a rising inflection, not on any fanciful theories of "psychological negatives," but simply because they are antithetical to the resolute *will* expressed in the previous

line. Then a momentary pause must separate the passages from the lines that follow. The painter has been carried away from all around him, wrapt in the conceptions of his wild dream of ambition. But the agonies of the dying victim awaken momentary pity as he turns to watch him. The pity passes into inhuman and selfish anger, and the "Ha!" is uttered with aspirated emphasis, rising to its height on the words

"RACK him | till he revives."

But again the solemnity of death awes even his cruel nature, and the conflict of varied feeling in the next stanza demands the highest dramatic conception and effort.

"*Váin, váin,* give o'er."

These words are exclamatory, and therefore take the rising intonation; the second "vain" also spoken a little lower than the first, and the whole line delivered in subdued tones, as the presence of death naturally suggests. But again, that agony bursting forth in "death dews on his brow," re-awakens ambition and banishes mercy.

"Stand back" is uttered hurriedly but not loudly, and the succeeding words are to be given in tones of suppressed force and excitement.

"I'll paint the *death-dew* on his *brow!*  
*Góds!* if he do not *díe* |  
But for one *moment*—*òNE*—till I *eclipse*  
*Conception* | with the *scorn* of those *calm lips!*"

In the Fifth Reader the editor has introduced the first "one" for emphasis. But the poet understood his business better than the compiler, for he repeats the word "one," indicating in that construction that "moment" which doubtless means a space of several moments is the first wish of the painter, and then he asks for "one," but "one" moment. The last stanza must be read slowly and solemnly, for the dying victim is now the master. His sublime fortitude is grander than the conceptions of the Painter, and Genius perverted by ambition does homage to Death and Immortality, which it affected to despise.

Every word, especially the emphasised words, of this stanza, must be delivered with subdued force and tremor of voice. The Mortal stands before the Immortal, and whispers in breathless expressions the solemn events before him.

*Shivering!* *Hark!* (*watching intently*) he *mútters*  
Brokenly *nów*; that was a difficult breath; (*very low*)  
*Another?* Wilt thou *nevér* come,—oh *Death!*

Look! how his temple *flutters!*  
Is his heart *stíll?* (pause) lift up his *head!* (*low and gentle*)  
He *shudders*—(*tremulous*) *gasps*—(*b. eathless*) *Jove*  
help him—*só* | he's | *dead!*" (*very deep*)

The voice scarcely rises above a whisper in this passage; the pauses are long, and the last word, "dead," must be prolonged, for it is not an expression of relief that the agony is past, but of solemn awe.

I give the concluding passage which, very unaccountably, has been omitted in the Fifth Reader—in full. In its delivery the reader becomes the commentator and preacher, and he assumes the dignity of the orator and the sternness of the moralist:

"How like a mounting *dévil* | in the *heart* |  
Rules | this unreined *AMBITION!* Let it once  
But play the *monárch*, and its haughty brow  
*Glóws* | with a *beáuty* | that *bewílders* thought  
And unthrones *peace* | *forévér*. Putting on  
The *very pomp* of *Lucifér*, it turns  
The heart to *ashes*, and | with not a spring  
*Léft* | in the *desert* | for the *spirit's líp*,  
We *lók* | upon our *spléndor*, and forget  
The *thírst* of which *we* *PERISH*!"

The terms *inflection*, *emphasis* and *pause*, require to be well understood, and I add to this study a brief explanation of such terms.

*Inflection* is always the most difficult function of the voice. It is not a sudden leap upwards or downwards, but a flowing of tone in the direction indicated, and varies in extent according to the nature of the thought. In the question "Did I say *new* or *old*?" everyone speaking naturally would give the rising inflection to *new* and the falling to *old*; and the extent of compass would probably be very slight, not beyond a third or fourth in music. But in the expression governed by great wonder, "Is this *you*?" the last word would ascend to a fifth at least. Another point must also be carefully observed: whenever the inflection is extensive, the pitch of the voice must be changed. When the inflection is upward, the voice at the beginning must descend slower than in the utterance of the previous word; and when it has to descend, it must start higher than the previous word. If the student finds any difficulty in applying these rules, his voice and ear need culture, and the culture is simple and cannot fail to be attended with success. To acquire facility and correctness in inflection, let him *stir* up and down the gamut. A piano will help him, and a violin is a sure guide.

*Emphasis.* The emphasis is varied and is guided by the sentiment. In anger or terror it is often sharp and quick; in pathos and solemnity it swells towards the centre of the sound, and in great hatred it generally grows in intensity towards the final part. But in every case it demands a *change of pitch*, lower if the inflection rises, and higher if it descends.

"All—I would do it *all*."

Here the voice pauses a moment before the final "all," and rising higher—which does not mean louder—than on "it," it then descends on the word "all."

*Pause.* No rule can be given for the length of a pause. Its time depends entirely on the state of mind which governs the speaker. The thoughtful reader, however, makes the very pause eloquent and impassioned, when justified by the event. Thus in the stanza beginning with "shivering," the pauses must be long between each exclamation and sentence. But every pause is full of meaning and power. He is watching the dying victim, and the look is one of intent earnestness, awe, and probably remorse or pity, all of which, without any guidance from rules, the reader will manifest if he conceives truly and fervidly the scene and the character he represents.

## METHODS OF TEACHING.

FROM THE ANNUAL REPORT OF INSPECTOR SMITH, OF HAMILTON

Aptitude to teach and the ability to govern properly are two essential requisites for successful teaching. It is a commonly received opinion that the acquisition of knowledge is the great aim of education, but this appears to me to be a secondary consideration. It is true that it is impossible to discipline the mind properly without imparting knowledge, but the great object to be attained is the growth and development of the mind and the formation of correct habits of life. In other words, instruction is the means and education the end. To secure these desirable results, it is of the greatest importance to have teachers who are not only conversant with the subject to be taught, but who are thoroughly familiar with the most approved methods of instruction and discipline. I found the teachers in the higher grades discharging their duties in a very satisfactory manner and exhibiting a great deal of skill in the art of teaching. There seemed, however, a tendency on the part of some of them to do too much of the work and leave too little for the pupils. Particularly was this the case in teaching the literature of the reading lessons. Some were in the habit of writing a number of words with their

meaning on the blackboard, these being copied by the pupils into note-books and committed to memory. It seems to me that it would be better to teach the pupils how to get at the sense of the passage read by giving a simple illustration of the meaning of any difficult word, allowing the pupil to use his own judgment in determining what the particular meaning of the word was in the passage under consideration, or by the judicious means of a dictionary. In the one case the pupils depend upon memorizing from note-books, while in the other the perceptive and reflective faculties are aroused and the memory retains ideas rather than mere words. There is a considerable amount of rote teaching in some of the lower grades, while in others the work is comparatively well done. I found in a number of instances that pupils were required to commit to memory the meanings of words which conveyed no idea to their minds. It was merely substituting one word that they did not understand for another equally unintelligible. In all the cases that came under my observation I pointed out the error to the teachers, and taught a class, to illustrate what to me seemed a better method. The really difficult part in teaching is to commence a subject properly, and it is in these lower forms that skilful and experienced teachers are required. This want we have strong reason to believe will be supplied by the training given in the County Model School. Of the methods of receiving answers from pupils while conducting oral recitations I found two in use. The one is known as the "Individual Method," in which the question is announced to the class, and all who think they can answer it rise to their feet or raise their hand. This possesses great advantages over every other method, and is less liable to be abused. It is, therefore, very desirable that it should be more generally adopted. The other is known as the "Concert Method." In this the question is announced to the class, and all answer in concert. Strong objections can be urged against the use of this method, since it has a tendency to produce a drawing sing-song manner of answering questions, that a few who know the lesson lead, while the rest simply follow without knowing the proper answer, and that often wrong words or phrases are used, which convey no idea at all, or else a very erroneous one. Considering the abuses that are likely to arise in connection with this method, and the strong objections that can be urged against it, I have discouraged the use of it as much as possible. In the hands of a judicious teacher it can be used with advantage in introducing a new subject or in preparing a lesson, but not in hearing one that has been prepared. In all such cases the individual method is preferable.

## THE SCHOOL-ROOM.

OUTLINE FROM IOWA NORMAL INSTITUTE COURSE.

### DIDACTICS.

#### *The Philosophy of Education.*

- I. THE SUBJECT OF EDUCATION—*The Human Being in Childhood and Youth.*
  - A. His educational susceptibility:
    - 1, a constitutional and fundamental quality; 2, the basis of all growth.
  - B. This susceptibility considered:
    - 1, as to the body: *a*, its growth from infancy—how? *b*, its adaptability under training to all requirements;
    - 2, as to his mind: *a*, its growth from infancy—how? *b*, in the individual, its adaptability, under education, to all requirements more limited; *c*, common characteristics of the race; *d*, special characteristics of the individual.
  - C. Classes of mental faculties or of phenomena.
    1. the universal phenomena, consciousness; 2, attention: *a*, its importance the foundation of all intel-

lectual greatness; *b*, its relation to consciousness, including: (*a*), observation; (*b*), reflection; (*c*), memory, retention of cognitions; 3, how attention may be deepened; *a*, repetition—not of mere words, but of vivid views of ideas and thoughts coupled with language; *b*, reflection; *c*, association; 4, how secured: *a*, a fixed determination on the part of the teacher to have it; *b*, a clear knowledge of the lesson at ready command; *c*, a suitable interest excited concerning the subject taught; *d*, the eye free to view all and each in the class; *e*, the manifestation of earnestness; *f*, a simple manner and style; *g*, the removal of all obstacles.

#### D. The intellect:

1, the senses: *a*, enumeration of them and function of each; *b*, the information gained by them necessary and antecedent to all external knowledge; *c*, their systematic cultivation—object lessons; 2, memory; *a*, its nature; *b*, its importance for intellectual strength; *c*, its cultivation; 3, the reflective faculties: *a*, the synthetic process—generalization; *b*, the analytic process—reasoning.

#### E. The sensibilities:

1, the emotions: *a*, their nature; *b*, classification; 2, the affections: *a*, their nature; *b*, classification; 3, the desires: *a*, their nature; *b*, classification; 4, the will: *a*, the elements involved in the act of the will: (*a*), motive; (*b*), choice; (*c*), execution; *b*, the regulation and culture of the will; 3, value of strong will-power under the guidance of conscience and reason.

## II. DISCUSSION OF WHAT EDUCATION IS.

### A. It has special departments:

1, physical; 2, intellectual; 3, æsthetic; 4, moral.

### B. It is a result consisting of:

1, development; 2, discipline; 3, strength; 4, skill.

### C. It is a process consisting of:

1, teaching; 2, training.

### D. Principles regulating teaching and training:

1, special principles—the intellect in particular; *a*, in childhood the perceptive powers are very active, so are comparison, memory, and the imagination; *b*, ideas of the outward world are obtained by perception; *c*, ideas thus obtained form the foundation of intellectual growth; *d*, a well-chosen system of object lessons (form, number, color, things, etc.) should form a part of primary instruction; *e*, languages should not precede the evolution of ideas and thought, but accompany them; *f*, the mind has no pleasure in confused and indistinct impressions, and cannot be benefitted by them; *g*, every subject should be reduced to its elements and one thing taken at a time: proceed step by step; *h*, out of the known develop the unknown; *i*, order must be observed—first objects, then names; thoughts, then sentences; knowledge, then definitions; facts, then laws; phenomena, then principles; concrete ideas, then abstract; sometimes wholes, then parts; constituting synthesis. Hence the error of committing to memory definitions, rules, and formulae, without their meaning having been discovered; *j*, memory is assisted by repetition, reflection, association, and action; *k*, each process of instruction should include full perception, distinct understanding, clear expression, and, when possible, the passing of thought into action; 2, general principles; *a*, education is based on the constitutional nature of the child, the peculiarities of each sex and of each child should be carefully studied; *b*, education pertains to the whole organism; *c*, the desire of children for muscular movement must not be repressed, but regulated; *d*, all education consists in doing and not doing, or exercise and inaction. What is desirable is improved by activity; tendencies to be repressed are kept dormant. This is the law of habit and experience; *e*, all activity should be pleasurable and varied; *f*, the child is not a passive recipient of external influences. The root of the work is in the scholar and not in the teacher; *g*, the teacher must have the voluntary and active co-operation of the pupil; *h*, the office of the teacher

is to set the mental machine in motion; to bring forth the forces; to apply them in an efficient manner, in the right proportion and in the right order; *i*, all school doings and school sayings must be made pleasant; *j*, school government must not admit any despotic or cruel tendencies; *k*, example is more weighty than precept.

### SCHOOL ECONOMY.

## I. ORGANIZATION.

### A. Provisions relating to order:

1, the seating: *a*, the teacher has a right to seat the school in a manner that will promote the greatest good; *b*, suggestions as to plans of seating; 2, school evolutions: *a*, evolutions for the whole school; *b*, evolutions for classes; *c*, recitation tactics for each subject, as reading, penmanship, arithmetic, geography, etc.; 3, treatment of privileges: *a*, general principles concerning privileges; *b*, method of granting them: (*a*), going out; (*b*), leaving seats; (*c*), speaking, etc.; 4, the programme should provide for: *a*, opening and closing exercises; *b*, intermissions; *c*, recitations; *d*, study; *e*, transaction of general business; *f*, administration of discipline; 5, attendance and tardiness: *a*, the necessary records; *b*, manner of keeping them; *c*, notices to parents, publication of Honor Rolls, etc.

## II. DEPARTMENT.

### A. Inculcate general morality—instruct in cardinal virtues:

1, truth; 2, purity of speech; 3, love; 4, good nature; 5, industry; 6, temperance; 7, politeness; 8, honesty; 9, integrity; 10, preferring one another.

### B. School morality:

1, put behavior at school on the law of morality—wrongdoing in school department is *sin*; 2, instruct as to neatness, promptness, quietness in walking, whispering, laughing, handling books and slates, etc.; observance of school plans.

## III. STUDY.

### A. Branches to be studied in the school.

### B. Branches to be studied by each pupil.

### C. The formation of classes.

### D. Examinations, oral and written.

### E. Recitation records.

## IV. GOVERNMENT.

### A. The object of government:

1, to teach that government is supreme; 2, to cultivate the habits of obedience and subjection; 3, to facilitate the employments of the school; 4, to promote the general good.

### B. Means of preventing offences:

1, suitable accommodations; 2, qualified teachers.

### C. Good management:

1, have a definite understanding with pupils as to rules and regulations; 2, conduct the school according to your sense of the fitness of things; 3, make it appear that you entertain large expectations of your pupils, both as to study and deportment; 4, maintain your system, and adhere to your programme; 5, practise self-denial for the good of your school; 6, be in no haste to inflict punishment, especially corporal punishment; 7, let your administration be wise, certain, consistent, and uniform; 8, display charitable, generous, and kind feelings, and not an exacting, severe, and authoritative manner; 9, so dispose your management that your pupils go through their duties without seeming to be guided; 10, let all learning, as far as possible, be a process of delight; 11, mind little things.

## V. ELEMENTS OF GOVERNING POWER.

### A. The teacher must have system:

1, time for everything; 2, place for everything; 3, method for everything.

### B. Energy.

### C. Vigilance.

### D. Firmness.

1, a will of great strength but not obstinate; 2, decisions must be made with certainty, and must be enforced steadily, wavering is fatal; 3, a firm hand in government is a source of pleasure to pupils, because it is a source of certainty and security.

## E. Confidence.

- 1, in the triumph of duty faithfully executed ; 2, in self ; 3, in pupils ; a, pupils are generally undervalued as to latent power ; b, offences by mistakes and inadvertency generally outnumber those committed by design and malice ; c, give more attention to the dull and vicious, than to the apt and moral.

## F. Self-control :

- 1, self-possession of your intellectual forces ; 2, impatience must be repressed ; 3, anger must be crushed ; allow no antagonism between yourself and pupils and parents.

## G. Personal influence.

- 1, bring moral, social, and intellectual worth to your support ; 2, maintain cheerfulness ; 3, withhold nothing in your power.

## H. Culture :

- 1, refinement in manners ; 2, pleasant tones of voice ; 3, avoid affectation ; 4, consideration of the wants and comforts of all.

### BILL OF INDICTMENT AGAINST OUR ENGLISH NOTATION.

BY PROFESSOR MEIKLEJOHN, ST. ANDREW'S UNIVERSITY.

1. An Alphabet of 26 letters is set to do the work of 45 sounds.
2. In this Alphabet of 26 letters, there are now only 8 true and fixed quantities.
3. The remaining 18 have different values at different times and in different positions ; and sometimes they have no value at all. In other words, they have a topographical value.
4. Some of these 18 letters do—in addition to their own ordinary work—the work of three or four others.
5. A Vowel may have from 20 to 30 functions in our English Notation ; a Consonant may have two or three.
6. There are 104 ways of representing to the eye 13 vowel-sounds.
7. Six of these vowel-sounds appropriate to themselves 75 ways of getting printed.
8. In the most purely English part of the language, the letters are more often misleading than not. In the word *cow* or *they*, for example, there is no single letter that gives any true knowledge or guidance to the child. That is, the letters in the purely English part of our composite speech have a historical, but no present, value.
9. The monosyllables of the language contain all its different notations, and these with the maximum of inconsistency. In reading the monosyllables, the child can trust neither his eyes nor his ears.

If this notation—which is the dress of language—could be exhibited to the eye by the help of colours, it would seem to be of the most piebald character. It would be not inaptly described by a sentence in one of Dickens' novels : 'As for the little fellow, his mother had him attired in a costume partly Scotch, partly Hungarian, mostly buttons,\* and with a Louis Quatorze hat and scarlet feather.'

If we compare the notation of our English tongue with the notation of the German language, we shall find that—as in its words, so in its letters—German is an almost perfectly homogeneous language. One sound is permanently, and not provisionally, represented by one symbol ; one symbol is permanently translated by one sound ; and the consequence is that the experience of the German child in learning to read is always self-consistent, and every effort he makes tells towards the desired result. The attitude of his mind is a simple and easy one ; every act of attention he makes

tells towards the required total ; he cannot go wrong if he pays any attention at all ; his eye and ear are always in accord, and help each other. Far different is the condition of the poor English child. His attention to the letters will quite as often mislead him as not ; in the purest English, the less attention he pays to the letters the better ; and he is like a man in trade—he may often be working as hard to make bad debts as to make good ones. The contrast between the work of the German Teacher and of the English Teacher is just as great. The German Teacher's work is simple and straightforward ; while the work of the English Teacher is at least five times as difficult, and the conquest of these difficulties requires keen skill, perpetual inventiveness, and untiring perseverance.

Now all this has come to pass simply from the independent and highly individualized character of the Englishman. A local usage—a traditional custom—would always override general convenience or a merely abstract consideration like logical consistency. Indeed, the confusion in our notation has parallels in almost every side of English life. It has an extraordinary parallel in our Weights and Measures, which have been regulated—down to the date of the 1878 Session of Parliament—entirely by local custom. An imperial bushel of corn is estimated in Mark Lane at 63 lb. ; but it was—down to 1878—72 lb. at Wolverhampton and Stafford, 70 lb. at Liverpool, and 75 lb. at Chester. In short, there were, prior to the passing of the Weights and Measures Act, twelve different kinds of bushels in use in the grain trade. This state of things gave rise to endless confusion. A man might buy his wheat by one measure, sell it by another, and, last of all, demand to be paid for it by weight. These complications involved endless reckonings, and, by consequence, numerous mistakes. They were a great hindrance to trade, and, no doubt, were now and then the cause of serious losses. Another parallel is to be found in the coinage of Austria. There is gold money ; there is silver money—some of it debased and deteriorated ; and there is copper money ; but, in addition to these, there are four different kinds of paper money in four different languages, and some of it is debased to the extent of sixty per cent. It is plain that, if one received payment of an account in six of these different kinds of money, there would be—over and above the circulation of the value of the things brought in a self-consistent arithmetic—another reckoning based upon the relative and temporary values of the different kinds of money. In such reckonings, a foreigner and a child would be at a very great disadvantage. Now, just as an English bushel or an Austrian coin is continually changing in meaning and value ; so the symbols by which we attempt to carry words to the eye of a child are constantly changing in meaning and value ; and the child's mind is proportionally confused and weakened. If we had in our arithmetic a traditional system of notation made up of the fragments of the Greek, the Roman, and the Arabic systems ; if 479 were written down as  $\Delta VII9$  ; and if, moreover, our coinage were so irregular that sixpence in Middlesex counted for eightpence in Surrey, but was only fourpence in Hertfordshire, then it would be a very difficult, tedious, and expensive process to teach arithmetic in our public schools.

The difficulty that would be felt, and the expense that would be incurred, in teaching such arithmetic as I have indicated are really felt and incurred in the teaching of reading—in putting into the minds of children an acquaintance with the bad habits of our notation. For the problem is not to make the child acquainted with 26 letters ; it is really to make him acquainted with and thoroughly practised in 158 eccentric and self-inconsistent habits which the English have acquired in the course of time, of writing down the sounds of their mother-tongue. To master 158 combinations would require 158 separate acts of attention—each of which must be re-

\*The buttons would represent the *cs*.

peated until the whole are thoroughly mastered. Well ; this can be done. But the difficulty is even greater than this. Of these 158 habits, some are inconsistent with and destructive of each other ; and the *experience* of the child is not a regular process of addition and cumulation, but sometimes of subtraction and loss. Let me take an example. There are in the language 59 words in which the symbol *ou* sounds as in *house, noun* &c. ; and, of course, if the child meets with a large number of such words, he naturally and quite unconsciously draws the conclusion that *ou* will always have this sound. But, by and by, he lights upon words like *your, four, would mould* ; and now, not only is his previous experience entirely upset, but he forms a vague idea that to *ou* may be attached almost any sound whatever. Now, if we attempted to give an arithmetical value to his experience we might say. He has met the first case of *ou* nine times ; he has met the second class six times ; and his experience is therefore equal to three. This is, however, rather a favoring way of putting it. The fact is, that, in our every-day procedure with children, the exceptions make themselves quite as important as the rule ; and both teacher and child, in a kind of silent intellectual despair, give up the guidance of the rule altogether, and teach and learn each word separately, as an individual, and not as one of a class.

The child at first expects to find a certain truth in these marks ; but he quickly comes to feel that it is no matter what sound you give to a sign—that the sign itself has only a chance value ; and so far as training is concerned, the teacher soon discovers that his eye is never rightly or thoroughly educated until after the expenditure of a disproportionate amount of time and money. He has constantly to read off letters that are not there, and to ignore letters that are there ; he is constantly coming upon new forms for the same sound, and new sounds for the same form, so that habit is out of the question. So far as the mind of the child is concerned, unless the teacher adopts a scientific method, no wish for classification ever arises in the child ; or it sets in late, if it sets in at all. His past experience is constantly putting him out—constantly tripping him up ; until at last he comes to feel that he need not rely on his own exertions, but must be constantly helped over the stones by the teacher. Thus all *teaching* of reading becomes *telling* ; and these are just contraries and exclusive of each other. And here is another loss ; our evil notation tends to destroy good teaching.

To put all this in a few words : *The character of our Notation prevents the formation of habits.* How serious a matter this is in education, how serious an expense it is to the country, a little reflection will show. The whole aim of education is to form habits. Habits are formed by the perpetual repetition of small acts of the mind or of the body ; and the more often these acts are repeated, the more easy it is to perform them, until at length they become a part of the spontaneous nature, and are performed with perfect ease and pleasure, and beneath consciousness. In other words, power has been produced ; and the exercise of power is always accompanied by a relax of pleasure—stronger or weaker according to circumstances. But not only is power produced by the repetition of innumerable acts of attention : a method or *path* is beaten through the subject itself by this perpetual treading of the feet of thought ; and the trained child can use the knowledge he has gained for the conquering of the unknown. He does not need to be *told* this and that and the other thing ; he knows himself how to *learn*—he has a method ; and he takes hold of every new appearance by the right handle. But these perpetual inconsistencies, these constantly recurring self-contradictions, this interminable challenge to the child not simply to recognise so many letters, but to ask himself what is their value here and there—to

ask himself whether he must not ignore and cut them altogether—prevent the growth of habit, the production of power, the formation of a path or method. They almost compel both teacher and pupil to learn every word as a separate and individual entity—just as he learns to know men and women. If, when the symbol varies and the sound remains the same, the child cannot believe his eyes ; and when the sound varies and the symbol remains the same, he cannot believe his ears ; and if the eyes and the ears are the two main avenues to knowledge, it follows that we begin the mental education of most of our children by demoralizing and confusing these two all-important organs. We invite the children to walk in what ought to be a plain path—the smooth and delightful road to the city of knowledge ; but this path is strewn with rough historic boulders, which delay their goings and weaken their intellectual limbs. For, as I have said, most of the letters have only geographical values ; and the young child's mind has to solve the difficult practical problem of Sir Boyle Roche, and to be 'in two places at once.'

The two sets of difficulties I have described so interlace with and ramify into each other, as to entirely prevent the formation of habit. In fact, they destroy mental habit. And habit, as has been said, is power ; and these two difficulties really go therefore to paralyze all mental power in the child—so far as reading is concerned. The logical conclusion that our English children must learn each word as an individual is borne out by the fact that they do learn to read in this way. Every person I have spoken with—H.M. Inspectors, Teachers, Managers, and many others—have expressed to me their conviction that English children learn their words as separate and individual existences ; and many of them go farther, and affirm that classification is useless if not impossible. Thus, for the child, our language sinks nearly to the level of Chinese. The essence of European thinking is classification ; but, so far as the notation of our language is concerned, we are out of the European sphere. And it is this tedious and mindless process that costs the country so much ; the improvement of our methods would result in an enormous cheapening of the process. This is a consideration which cannot be too earnestly pressed upon the attention of the Education Department, School Boards, and School Managers. In the schools I have visited in every part of the country, I have always found both teachers and children working with far too much strain against these difficulties, beating up against contrary winds, driven hither and thither by the cross currents and chopping seas of our different notations, and accumulating solid and trustworthy experience—at the expense of the country—in the slowest and most laborious possible fashion. Just as twenty-five per cent. of base or depreciated coin thrown into the circulation of the country would upset all commerce, and turn bargaining into barter or merely individual transactions, the twenty-five per cent. of anomalous notation (and this is a very moderate estimate) turns almost all the mental effort of the child into a momentary shift—into a series of hand-to-mouth transactions. In other words, the child cannot accumulate experience with ease or economy ; he is constantly meeting with new complications which his past experience will not unravel—in fact, he works as if he had no past, or—what is worse than no past—a past of broken habits and loose perceptions, behind him. No wonder that the lower classes find it difficult to learn to spell.

There is a passage in *Alice through the Looking-glass* which describes, as if in a parable, the difficulties felt by most children in their attempts to master the reading of our mother-tongue :

Whenever the horse stopped (which it did very often), he fell off in front ; and whenever it went on again (which it generally did rather suddenly), he fell off behind. Otherwise he kept on pretty well, except that he had a habit of now and then falling off sideways ; and as he

generally did this on the side on which Alice was walking, she soon found it was the best plan not to walk *quite* close to the horse.

"I'm afraid you've not had much practice in riding," she ventured to say as she was helping him up from his fifth tumble. The knight looked very much surprised and a little offended at the remark. "What makes you say that?" he asked, as he scrambled back into the saddle, keeping hold of Alice's hair with one hand, to save himself from falling over on the other side.

"Because people don't fall off quite so often when they've had much practice."

"I've had plenty of practice," the knight said gravely; "plenty of practice!" Alice could think of nothing better to say than "Indeed!" but she said it as heartily as she could. They went on a little way in silence after this, the knight, with his eyes shut, muttering to himself, and Alice watching anxiously for the next tumble.

"The great art of riding," the knight suddenly began in a loud voice, waving his right arm as he spoke, "is to keep"—Here the sentence ended as suddenly as it had begun, as the knight fell heavily on the top of his head exactly in the path where Alice was walking. She was quite frightened this time, and said in an anxious tone, as she picked him up. "I hope no bones are broken?"

"None to speak of," the knight said, as if he didn't mind breaking two or three of them. "The great art of riding, as I was saying, is to keep your balance properly. Like this, you know"—He let go the bridle and stretched out both his arms to shew Alice what he meant, and this time he fell flat on his back right under the horse's feet.

"Plenty of practice!" he went on repeating, all the time Alice was getting him on his feet again. "Plenty of practice!"

"It's too ridiculous!" cried Alice, losing all her patience this time. "You ought to have a wood in horse on wheels, that you ought!" "Does that go smoothly?" the knight asked in a tone of great interest, clasping his arms around the horse's neck as he spoke, just in time to save himself from tumbling off again. "Much more smoothly than a live horse," Alice said, with a little scream of laughter, in spite of all she could do to prevent it. "I'll get one," the knight said, thoughtfully to himself. "One or two—several."

"The great art of riding is to keep your balance properly;" and the great art of reading is to know when to give the sound, and when to give this sound, and when to give another sound to the same letter, and to keep your mental balance among all this confusion. Alice "found it was the best plan not to walk *quite* close to the horse," and children very soon instinctively learn that it is the best plan not to keep *quite* close to the letters, but to be ready to give a new sound to the old friends at discretion or indiscretion. And thus a want of firmness, confidence, and mental clearness is generated, which probably delays the acquisition of other subjects, and which may in fact stick to the pupil all his life. For the attitude of the mind in learning to read English is not a simple one—like the mental attitude of the German child. It is a threefold state of mind. The child has to do not one thing, but three things:

1. He has to notice when he must *not* notice (in the case of *silent* letters);
2. He has to notice when he must alter his translation of a symbol—or be *false* to his past experience;
3. He must notice when to give the old translation, or keep *true* to his past experience.

It is very difficult to make one set of movements with the right hand, and a different set with the left; but if we had to keep up a third and still different set of movements with one of the feet, it would be a very slow and difficult thing to learn.

The language contains more than 1300 words the notation of which is not in harmony with the pronunciation, and these 1300 words are the commonest—the most in daily use. Of these, 800 are monosyllables—and these too in the most common use—words like *too*, *said*, *they*, *brought*, *one*, and *once*. The problem of teaching to read a true notation is to train children to co-ordinate with and fit to the *eye-language* (the printed symbol), which they do not yet know, the *ear-language*, which they have known from their earliest days. But what if the eye-language refuses to be fitted to the ear-language? What if they have long bid each other good-bye and taken separate paths? What if the task becomes for the

child a merely arbitrary and entirely forceful linking of the one to the other?

The important question now arises. *Is there an antidote to this state of things?* The two diseases or malformations in the language are plain to every one; and they are perpetually present to the elementary teacher. What are we to do?

The analogy in human affairs points to the fact that the presence of a great defect in one direction points to the presence of a great power in another direction; and the question arises: Is there, for the enormous deficiencies and absurdities in our notation, some countervailing advantage in the language?

I believe there is an antidote—a very simple but a very effective one. The antidote is to be found in the language itself. It is easy by the invention of diacritical\* marks, to guide the child to the ordinary pronunciation, but then these diacritical marks are themselves a new notation. The cure is not to be found in that direction. The language is poor in letters; but it is rich in words. The wealth of the vocabulary may make up for the poverty of the alphabet. There is no more common experience in the writing of English than the quickness which the mind soon acquires in rejecting this phrase and preferring that—in substituting one word for another—in selecting, among a number of candidates, the aptest word for the purpose. There is probably no European language with so many different words for the same notion; and it is quite possible to write one's ideas in two perfectly different kinds of English—Latinised English or pure English. This then raises the hope—is it possible that, by conscious selection, we should come to write English which should present no difficulties to the learner, and which should be printed in a self-consistent notation?

I have made the small but important discovery that there is such a notation in the language, and that it is possible to write decent English in it. Among the detritus of notations which represent the English language upon paper, there exists a PERFECT NOTATION, which is always self-consistent, and in which sound and symbol are always in agreement. This perfect notation represents the twenty-six letters of our alphabet in only one of their functions, and, if intelligently taught, it can be learned with pleasure in a very short time. Narrative of all kinds—Bible Stories, Travels, Natural History, and even Verse—can be written in this perfect notation without much injury to the style and rhythm of the language.

If this is so, then it follows that the existence of this perfect notation at once puts into our hands the true method of teaching to read. Acquaintance with one self-consistent notation forms the primary condition of all methods and all attempts at teaching the paper-form of our language to young children.

A child who has mastered this has mastered it with all his faculties preserved to him, his rational and "natural" expectations gratified, and his love for self-consistency and intellectual honesty contented.—*How to Teach English Reading.*

#### WHO BELIEVE IN EDUCATION?

The idea is very widely diffused that the "educational party" is very large, and by this term is meant commissioners, trustees, superintendents, principals, teachers, and that indefinable class "friends of education"—meaning those who send to school or "holler" about the schools—when they are running for an office. Do not for a moment suppose that all these people believe in education.

(1.) What a man knows nothing about, he does not, cannot, believe in. Now, how many of all the above classes know about education, its history, its principles, its ideas, its methods, its exponents, its prevailing tendency to-day, the stages of its progress, the history of its founders, the influence of each, &c. &c.?

\* Such marks, I mean, as are used to indicate silent letters, etc., etc.

(2.) What a man believes in he will invest something in. Who are investing in education? Is not the class very small? Ask Henry Barnard, ask the publishers of educational journals, and teachers. Ask those who are attempting to advance education.

Look at the Principal of yonder large public school, and consider his works and his methods. Yes, consider his stock in trade. Is it not a small one? He begins to-day where he left off yesterday. The profound influence of the world of ideas is unfelt by him; he teaches (as he calls it) without meddling with ideas. What cares he for Pestalozzi, Comenius, Arnold or Page? That they grappled with education hand to hand, in living contact, is totally unknown by him. He "hears classes" to-day with no more additional knowledge than he had when he was declared fit for the mighty task more than twenty years ago. Fit? How was he fitted? What gave him fitness? That he knew how to perform the ordinary problems in arithmetic, could parse even in Pope's essay, and bound the States, give the capitals, spell the words in the spelling books and many others! By no means! Those are not the claims a right-minded man will make that he should be the moral and intellectual leader and adviser of one or one hundred young persons.

Let us see what spirit he is of. Does he really believe in education? It would seem so. But actions speak louder than all his fine professions. Look into his library. He has a few volumes, perhaps a good many. We are not speaking of general literature, but of education. Look over his shelves and see. Is it possible? Not a cent! Not a volume—unless it be the last year's reports, which cost him nothing. "Alas! poor Yorick, we knew him well."

What is he investing in now? Does he read an educational journal? Does he attend any educational associations? Does he attempt to obtain the views of others? Does he attempt by writing and speaking to have some views of his own? Not at all. He has got a place; he believes in the money he gets, but he *does not believe in education*.

And if we should look at the fashionable who has yonder "young ladies' school," we should very likely find it was just so there. Everything is in order. It is not elegant to eat much, or to be very much in earnest about anything; these are maxims she teaches, as well as those pertaining to polite literature.

Trustees can with some show of reason say "why should we know about education? It is the business of the teacher." But what if the teacher does the same!

Here are very serious things to think over. Read the growing statistics with pride if you will, but reflect at the same time that there is a vast number of *educational atheists*. PROBLEM—Are you, reader, one of them?—*New York School Journal*.

#### "THE DISADVANTAGES OF CITY BOYS."

Some months ago, Rev. Washington Gladden, of Springfield, Mass., believing that if he could find out how the active and prominent men of his own city spent their boyhood, it would help to solve the problem of what is the best training for boys, prepared the following circular, which was sent to the one hundred men who could fairly be said to stand at the head of the financial, commercial, professional and educational interests of the city:—

"MY DEAR SIR:—I desire to find out, for the benefit of the boys, how the leading men of this city spent their boyhood. Will you be kind enough to tell me—1. Whether your home during the first fifteen years of your life was on a farm, in a village, or in a city? and, 2. Whether you were accustomed, during any part of that period, to engage in any kind of work when you were not in school? I should be glad, of course, to have you go into particulars as fully as you are disposed to do; but I do not wish to tax your patience, and I shall be greatly obliged for a simple answer to these two questions."

No less than eighty-eight of the busy gentlemen who received this circular were kind enough to answer the questions, some of them briefly, most of them quite fully, and it turned out that few had been brought up like most of the boys who crowd the ball grounds and fill the streets of our cities in these latter days. Here is a brief summary of the returns:

Of these eighty-eight men, twelve spent the first fifteen years of their life in the city, twelve in villages, and sixty-four were farmers' boys.

But of the twenty-four who lived in villages and cities, six were practically farmers' boys, for they lived in small villages, or

on the outskirts of cities, and had the same kind of work to do that farmers' boys have. One of these village boys said:—"I learned to hoe, dig, and mow, in fact, I was obliged to work, whether I liked it or not. In winter I went to school, and worked nights and mornings for my board."

Another said. "I used to work away from home, some on a farm, in the summer and fall. In the winter, when going to school, we three boys used to work up the wood for summer use."

Four others told substantially the same story. As these were about the same as farmers' boys, we may add them to that list, so that seventy out of eighty-eight, almost four-fifths of all these men, had the training of farm life.

Now, how was it with the eighteen city and village boys on the list? Did they have an easy time of it? Five of them did, as they testify; five of them had no work in particular to do, but one of the five says that he studied law when out of school, and that was not exactly play. The rest of the eighteen were poor boys, not paupers, by any means, but children of the humbler classes, many of them in needy and narrow circumstances, and though they lived in cities or villages, they were accustomed from their earliest years to hard work.

"Was generally employed," says one, "during the summer months, and in vacations, in doing any kind of work that offered."

Four of the city boys were newsboys. One of them says. "The last year I was connected with the press I earned one hundred dollars before breakfast."

Another: "I have paid my own way since eight years of ago, without any assistance except my board, from my eighth to my eleventh year."

Of all these eighty-eight boys, five only had nothing particular to do.

While these boys were growing and working, a great many others, sons of merchants and lawyers, were growing up in Springfield, going to school, and amusing themselves, as boys of their class are apt to do. Where are they? Only five of this class are heard from among the eighty-eight solid men of that city. Some of them, perhaps, are prosperous men in other cities, but the number cannot be large, for in Springfield only five men out of eighty-eight came from this class. Ninety-four and a half per cent. were either farmers' boys, or poor and hard-working town boys.

Mr. Gladden made his report to the public of Springfield, in the form of a lecture. The mere announcement of the subject alone crowded the church, which is a large one, and the interest in the lecture was so great that the Mayor and several of the representative citizens requested a repetition in the Music Hall. When this came off the hall was packed, and hundreds went away from the doors unable to gain entrance.

Mr. Gladden has rewritten the lecture, and his interesting facts and logical deductions will appear in one of the leading magazines for March. He is now engaged on a "Talk with Girls," for the same magazine. It will be printed before long, and will be of vital interest to girls, and suited to their requirements, as this paper is suited to the boys.—*St. Nicholas for March*.

THE HANOVERIAN VILLAGE SCHOOLMASTER.—The schoolmaster unites in one person the duties of sexton, grave-digger, and bell-ringer. All teachers must have passed an examination held by the state, for which they are prepared by some years' study at preparatory schools and a three years' course at one of the eight normal schools in Hanover. In order to enter these schools, the applicant must be eighteen years old and be able to pass an examination in the elementary studies. Teachers earn from one hundred and seventy-five to two hundred and twenty-five dollars a year. In E—the teacher received eighty-seven cents a year from each of his one hundred pupils, fifteen dollars a year from the church for his services as sexton, besides fifty cents for each adult's and twenty-five cents for each child's grave dug by him. From the state he got eighty-two dollars, and from the village seven dollars and fifty cents a year, with six acres of good farming-land and a house. All the books and maps I saw were of the most old-fashioned sort, and the teacher was drunk whenever he had money enough to buy schnapps. The church consistory appoints and removes the village teachers throughout Hanover. Teachers are not considered socially equal to nor do they associate with ministers. With the teacher ends the list of village officers, and next come those communal servants for whom we in this country have no equivalent.—From "*Hanoverian Village Life*," by Walter Nordhoff, in *Popular Science Monthly*.

**IMPORTANCE OF A KNOWLEDGE OF POLITICAL ECONOMY.**

Of the importance of the questions with which political economy deals it is hardly necessary to speak. The science which investigates the laws of production and distribution of wealth concerns itself with matters which among us occupy more than nine-tenths of human effort, and perhaps nine-tenths of human thoughts. In its province are included all that relates to the wages of labour and the earnings of capital; all regulations of trade; all questions of currency and finance; all taxes and public disbursements—in short, everything that can in any way effect the amount of wealth which a community can secure, or the proportion in which that wealth will be distributed between individuals. Though not the science of government, it is essential to the science of government. Though it takes direct cognizance only of what are termed the selfish instincts, yet in doing so it includes the basis of all higher qualities. The laws which it aims to discover are the laws by virtue of which states wax rich and populous, or grow weak and decay; the laws upon which depend the comfort, happiness, and opportunities of our individual lives. And as the development of the nobler part of human nature is powerfully modified by material conditions, if it does not absolutely depend upon them, the laws sought for by political economy are the laws which at last control the mental and moral as well as the physical states of humanity.

Clearly, this is the science which of all sciences is of the first importance to us. Useful and sublime as are the sciences which open to us the vistas of Nature—which read for us the story of the deep past, or search out the laws of our physical or mental organization—what is their practical importance as compared with the science which deals with the conditions that alone make the cultivation of the others possible? Compare on this ground of practical utility the science of political economy with all others, and its preëminence almost suggests the reply of the Greek: "No I cannot play the fiddle; but I can tell you how to make of a little village a great and glorious city!"—MR. HENRY GEORGE, in *Popular Science Monthly for March*.

**THE SLAUGHTER OF THE INNOCENTS.**

I may here record the hours of a school for girls, which appear to me to exceed what is wholesome, and to be well calculated to lessen their mental elasticity and interfere with their healthy development. These girls rise at 6.25; prayers are at seven, and breakfast at a quarter to eight. Their studies commence at a quarter-past eight and last till twelve, with a break of a quarter of an hour; then dinner, during which silence is enjoined and a book read aloud; then an hour's recreation is allowed. Needle-work and school-work follow for two hours; half an hour's recreation succeeds, and then come two hours and a half of study and instruction of various kinds. The next meal after the twelve-o'clock dinner is at half-past six, and this is the last. It is succeeded by half an hour's recreation, and this by half an hour's study. Prayers end the day at half past eight. Here we have nine and a half hours (including religious exercises) of sedentary occupation, and only two hours and a quarter for recreation and one hour and a half for meals. I think we shall be agreed that a little less school and a little more play would be desirable, and that there need be no cause for surprise to find that many of the scholars suffer from head-aches, anæmia, arrested development, and various manifestations of exhausted nerve-force.—DR. HACK TUBE, in *Popular Science Monthly for March*.

**Examination Questions.**

**EXAMINATION PAPERS.**

FOR TEACHERS' CERTIFICATES, CALIFORNIA.

*First Grade A.—Arithmetic.*

1. What is involution? evolution? cube root? Why in square root, do you point off into periods of 2 figures each?
2. A road is 60 ft. wide: on its left side stands a tower 300 ft. high—how long would a line require to be to reach from a window 20 ft. below the top of the tower to the middle of the road?

3. What is a fraction? The value of a fraction? What is the value of  $2\frac{1}{2}$ ? Why do you reduce fractions to a common denominator before adding? Upon what principle do you reduce fractions to the Least Common Denominator?

4. A man is offered \$5.00 a barrel cash for 100 barrels of flour, and is at same time offered \$5.50 on 9 months' credit, which is the better offer, and how much, money being worth 1% per month?

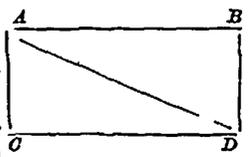
5. 3 men, A, B, and C, enter into a partnership. A puts in \$5000 and 5 months after takes out \$1000. B puts in \$6000. C puts in only \$1000. At the end of the year their gain is \$9000; of this C is to receive  $\frac{1}{3}$  for managing the business, the balance being divided amongst them all according to their respective stock and time. How much does each receive?

6. Needing \$600 for three months, I borrow at the bank at  $1\frac{1}{2}$  per cent. per month. What must be the face of the note? (No days of grace.)

7. Extract the square root of  $\frac{1}{2}$ .

8. If 6 men can dig a trench 216 ft. long, 4 ft. deep, 2 ft. wide in 10 days, working 8 hrs. a day, how many men will dig a trench 5 times as long,  $1\frac{1}{2}$  times as wide,  $\frac{2}{3}$  as deep, working 10 hrs. a day?

9. A piece of land is rectangular, 400 rds. by 300 rds. A road runs all round it, and another goes straight from D to A through C the centre? A man is going from D to A, how much will he gain by going the "centre road" instead of first to C and then to A?



10. Sent my agent \$4,200 which, after deducting commission at 5%, he invested in silk at \$2.00 per yard. I paid for freight, etc., \$25; and so ld at \$2.60 per yard. How much did I gain on the whole?

*First Grade A.—Geography.*

Values.

- 6 1. Of what service is the ocean? (Answer fully in a few words.)
- 9 2. What formed the slopes, plains, and valleys? Where are the seas, gulfs, bays, and lakes most numerous? In what respect do Africa, South America, and Australia resemble each other?
- 10 3. How do you account for shells being found on the tops of high mountains? In what direction do mountain chains generally run? Where are the highest plateaus on the globe?
- 10 4. What part of the earth's surface is the hottest? why? How is it that Quito has such a temperate climate?
5. What keeps the water of the ocean pure? How do you account for icebergs being found in the ocean as far south as Newfoundland? What is the difference between a glacier and an iceberg?
- 10 6. Name the different zones, and give the limit of each. In which zone does most of the land surface lie?
- 10 7. Name and locate 4 noted volcanoes. What is a lake? In the mines in Nevada it is so hot that men cannot easily remain long at the bottom of the mines. How do you explain this heat?
- 10 8. Explain what causes the trade winds. Where do they prevail and in what direction do they blow?
- 10 9. Explain clearly the cause of day and night.
- 15 10. Tell all you can about the ocean currents, stating what causes them and where found.

Values

*First Grade A.—Longfellow.*

- 10 1. What countryman is Longfellow? Where does he live? Name 2 other poems beside Evangeline that he has written.
- 10 2. What are the historical facts on which Evangeline is based? (Answer fully but briefly.)
- 15 3. Describe Evangeline's person and character as you have gathered it from the poem. (While examiner will allow for difference of opinion, this question must be marked closely; vague statements will not do.)
- 35 4. Part second of poem. Where was *Grand Pre*? "freighted vessels" with what? Explain clearly following:—"household gods" "Acadians" why? "arks of Newfoundland" what are they? "Southern savannas" "Father of

waters," "Seizes the hills in his hand, and drags them down to the ocean." "As the emigrant's way o'er the western descent is marked by campfires long consumed, and bones that bleach in the sunshine." "Urged by a restless longing" caused by what? "Voyageur?" "Prairies of fair Opelousas" where? "A wilderness sombre with forests" "turbulent water" why so called? "Cotton-trees nodded their shadowy crests" what is meant by "shadowy crests?" why so called? "lagoons?" "rushing chutes?" "maze of sluggish and devious waters?" (In marking above, examiner must not accept vague answers; they must be clear and to the point.)

- 30 5. Write in prose, using your own words as far as you can, the latter part of Part I, beginning at "overwhelmed with the sight, yet speechless, the priest and the maiden."

Values

First Grade A.—Grammar.

1. Analyze—  
10 "I bring fresh showers for the thirsting flowers,  
From the seas and the streams;  
I bear light shades for the leaves when laid  
In their noon-day dreams."  
20 2. Parse words italicized in No. 1.  
15 3. Write a synopsis of the indicative active and passive of "SING"—giving only 3rd person singular.  
15 4. Give imperative and infinitive and participles active and passive of *throw*.  
10 5. Why is the subject of a finite verb in the nominative? What do you mean by a *finite verb*? When is a noun in the objective case?  
4+6 6. Why do nouns have number? Form plural of: army, attorney, loaf, knee, tomato. Give possessive sing. of same words.  
7. What are the different ways of distinguishing the masculine and feminine genders?  
2+4+4 Give feminine of: stag, hero, executor, uncle.  
Give masculine of: widow, poetess, abbess, nun.  
8. Parse that in: *That man told me that that that is badly written.*

## Notes and News.

### ONTARIO.

Hon. Adam Crooks has gone to England. It is understood that one of the objects of his visit is to secure a Classical Professor for University College, Toronto.

Mr. D.P. Clapp, B.A., has been appointed Inspector of the schools of Listowell. The new High School in Listowell is about ready for occupation.

Mr. William Anderson, English Master of the Toronto Collegiate Institute and one of the founders of the Ontario Teachers' Association, has been appointed Auditor of the city of Toronto. We commend the principle of appointing teachers to good municipal situations. It is one of the ways in which a community can in some measure repay its debt to the earnest teacher. Mr. Samuel Hughes, who has taught the Preparatory form in the Institute during the past five years, has been promoted to the position vacated by Mr. Anderson; and Mr. Peter McEachren, an honor undergraduate of Toronto University, takes charge of the Preparatory form. Mr. McEachren received his training in the Institute.

Mr. Somerville, Inspector of the South Riding of Wellington, has resigned his position. His resignation will be a great loss to the teaching profession in the province. The warden of the county has appointed Mr. Donald McCaig as his successor until the meeting of the County Council.

Mr. Sandford Fleming, C.E., has been elected Chancellor of Queen's University for the next three years.

Mr. Jeffers, principal of the Peterborough Collegiate Institute, has intimated to the School Board that he will resign his position if they put in force a resolution to reduce the salaries of the teachers of that town.

The following officers were elected unanimously at the last meeting of the East Middlesex Teachers' Association: President—John Dearness, I.P.S.; First Vice-President—Mr. Jarvis; Second Vice-President—Miss Boone; Secretary, Mr. Boone; Treasurer—W. D. Eckert.

The Ingersoll *Chronicle* speaks thus of the High School: "We are pleased to note the prosperous condition of our High School. The present able staff is now composed as follows: Mr. A. M. Morris, head teacher; Mr. Marchant, late of Port Dover, and Mr. W. Green, of Port Hope, first and second assistants, respectively. The best of order is being maintained, and the pupils are receiving a thorough education."

The teachers of East Middlesex have resolved to have uniform examinations twice a year. They also resolved to petition the County Council for the establishment of a High School in East Middlesex.

On the recommendation of Mr. W. E. Tilley, head-master, the afternoon recess has been done away with in the Lindsay High and Public Schools, and the schools are dismissed at a quarter to four o'clock, instead of four o'clock as formerly.

The London Board of Education, after a lengthy discussion, decided, by a vote of 12 to 6, to retain music as a subject to be taught in the schools.

PAKENHAM HIGH SCHOOL.—Owing to representations made to the Government, the Ontario Educational Department has passed an Order-in-Council rescinding the Order abolishing the Pakenham High School.

The *Canada Champion* says: "We are informed that a lively trustee meeting recently took place at a certain section of Trafalgar. A boy had been expelled from school, and at the trustee meeting to decide whether he would be admitted again, his father and one of the trustees got into high words, and went outside to settle it, which they did in a square, stand-up fight, lasting fifteen minutes. They then shook hands, having more respect for each other than ever.

There are twenty-five students in Toronto University who are in several stages actively proceeding to the degree of LL.B., 200 to the degree of M.B., and 400 to the degree of B.A.

The following information is gleaned from the annual report of Mr. Smith, Inspector of Schools in Hamilton:

TEACHERS, THEIR QUALIFICATIONS AND SALARIES.—Of the 89 teachers employed by the Board 4 are males and 85 females, the male teachers being the head masters of the four districts into which the city is divided for public school purposes. Of these 46 have attended the Normal School, 25 have been trained in the County Model School, while the remaining 19 have had more or less experience in teaching, so that at the present time the city schools are under the charge of trained and experienced teachers, a fact that speaks well for their future prosperity. The number of teachers holding first-class provincial certificates is 14; second-class, 44; first class, old county board, 6; third class, new county board, 26. The highest salary paid to a male teacher was \$850; the lowest, \$700, the average being \$737.50. The highest salary paid to a female teacher was \$500; the lowest, \$200, the average being \$289.35. In addition to the regular staff of teachers, a number of monitors were employed for occasional service and were paid at the rate of \$12 per month.

ATTENDANCE OF PUPILS.—The school population (comprising only children between the ages of five and sixteen years) is estimated at 7,950. Of these, 5,714 were enrolled in the public schools during the past twelve months, leaving 2,236 as attending the Separate Schools, Wesleyan Female College, Collegiate Institute and private schools.

The annual report of the Inspector of Schools in Kingston for 1879 gives the following statistics: total number on the rolls, 2,822; boys, 1,412; girls, 1,410; average attendance, 1,391; teachers employed, 28; males 6, females 22; average salary paid, male \$537.50, female, \$216; certificates—1 first, 15 second and 12 third; no permits. Average attendance for the last half of 1879, 1,407; for 1874, 1,016, showing an increase of 391, or nearly 40 per cent. Cost of the public schools in the city in 1879, \$11,860; in 1874, \$12,570, showing a decrease of \$710.

### NOVA SCOTIA.

A case having important educational bearings has recently been decided in the Supreme Court of this province. It may be premised that the Provincial Statutes on Education provide a three-fold method for the support of the public schools:—

1. Grants to teachers paid directly from the Provincial Treasury, through the Superintendent of Education, according to grade of service of teacher.

2. A fund for each county levied on its property, and amounting to a sum equal to thirty cents for each head of population according to the last census. The county fund is distributed on the basis of school attendance.

### 3. Local assessment.

The difficulty issuing in the suit above referred to originated in refusal on the part of the municipality of Dartmouth to assess itself for its proportion of the county fund for the city of Halifax, claiming exemption through the peculiar wording of its incorporating Act. The suit had been pending for some years, and, having engaged the attention of the leading members of the provincial bar, was regarded as involving important principles in its decision. The Court rendered a unanimous decision affirming the liability of the town of Dartmouth and upholding the educational law in its integrity.

One of the fine educational structures of the town of Yarmouth was destroyed by fire on the 21st ult. It is deplorable to be forced to believe that the only explanation offered is incendiarism. The edifice burnt cost upwards of \$10,000, and provided excellent accommodation for a school of six departments, with two hundred pupils.

The Legislative Council, partly perhaps through lack of political measures for discussion, devoted two or three sessions recently to a consideration of educational questions. A solitary attempt to rehabilitate the skeleton of the old voluntary system, or no-system, was received with conspicuous coldness. Whether in other matters or not, in *this* the Legislative Council fairly represents the progressive sentiments of the people at large.

#### NEW BRUNSWICK.

The annual report of the Chief Superintendent, laid before the Legislature early in March, contains the following statistics relating to the year ending April 30th, 1879:

Number of children at school during the year, 70,889, increase 2,664. The proportion of the entire population of the Province enrolled at school the summer term was 1 in 5.11. The counties in which the proportion was largest were Madawaska (4.35) and Westmorland (4.44). In the winter term, the counties of Carlton (1 in 4.02) and Westmorland stood highest in respect to the proportion of the population at school.

The percentage of enrolled pupils daily present on an average during the period the several schools were in session, was for the Province 55.08 per cent. in the summer term, and 57.49 per cent. in the winter term. The counties of St. John and Madawaska stood highest in this respect in the summer; and St. John (62.96 per cent.) and Albert (59.19 per cent.) in the winter.

During the winter term there were 1345 teachers and assistants employed (increase 47,) 548 of these being men, and 800 women; 1077 were trained and 258 untrained. The classification of teachers was as follows:

	Gram. Sch.	I.	II.	III.
Male.....	14	134	200	198.
Female.....		123	341	320.

The steady advance in respect of the length of time the schools are kept open during the year is mentioned as a fact of much moment. The actual number of legal teaching days during the year was 226, and the average time of keeping the school open, exclusive of holidays, vacations and Sundays, was 211.30 days, which was "5.30 days in excess of the average time reached by the schools of Ontario in 1878."

Three hundred and twenty-five persons were admitted to examination for Provincial Licenses during the year, 244 of them by virtue of being student-teachers at the Normal School, 311 obtained licenses of some class.

The whole number of different pupils in attendance at the schools of the Province for some portion of the school year ended October 31, 1879, was 71,764, or 1 in 3.56 of the population by the last census.

Speaking on the subject of county institutes, the report says, "There is much talent in the profession, and every annual meeting of these institutes may be made of increasing interest and profit, if the several Committees of Management are careful to provide practical subjects for discussion, and to seek out those teachers in the county whose ability and experience best fit them to lead in the discussion of any particular subject, or to exemplify correct methods in any particular department of school work."

In relation to Grammar School Grants, the Chief Superintendent speaks as follows: "I think the time has fully come when encouragement should be given to *High School work in whatever district it is performed, and in proportion to the character and extent of the work done.* This is the principle which has been adopted for

the disbursement of the superior allowance of \$7,000. There is no good reason why the High Schools of St. Stephen, Milltown, Newcastle, Moncton, Portland, and the Girls' High School in St. John, should not receive a portion of the money annually applied in aid of secondary education. Their claims are as good as, and even superior to, those of most of the 'Grammar Schools.' In fact, the Grammar School Grants should be thrown open to any and all districts. This would, I am certain, secure more completely the object of the Grant, the encouragement of secondary education. I would, therefore, recommend that on and after November 1st next, any district in the Province be allowed to participate in the Grammar School Grants, according to the number of pupils annually certified as having successfully passed examination in any of the standards that may be prescribed for high school classes by the Board of Education. It should also be provided that any property now owned by the Grammar School Boards should vest in the Boards of School Trustees of the districts in which it lies.

The complete list of the medals offered by His Excellency the Governor General to the Educational Institutions of New Brunswick is as follows:

- The University of New Brunswick—A gold and a silver medal.
- Mt. Allison Wesleyan College—A silver and a bronze medal.
- Saint Joseph's College—A silver and a bronze medal.
- The Provincial Normal School—Two silver medals.
- The Girls' High School, St. John—A silver medal.
- The Provincial Model School—A bronze medal.
- The High School, Fredericton—A bronze medal.
- The Grammar School, St. John—A bronze medal.
- The High School, St. Stephen—A bronze medal.
- The High School, Woodstock—A bronze medal.
- The High School, Chatham—A bronze medal.
- The High School, Newcastle—A bronze medal.
- The High School, Moncton—A bronze medal.

At the closing examination of the Normal School, on the 12th of March, there were present: His Honor the Lieut.-Governor, the Chief Superintendent and several other members of the Board of Education, members of the legislature and numerous other visitors. Classes were examined in Reading and Elocution, Geography, Music, Natural Philosophy, English Literature, Natural Sciences, etc., as well as in relation to the principles of Method as applied to certain branches. There were also illustrative lessons given by ten of the student teachers, either in the model departments or in their own school rooms to classes of their fellow-students. Criticisms upon several of these lessons were given by some of the student teachers, who had been observers, and the Principal commented upon these as occasion required. The work was of a highly satisfactory character, and His Honor expressed himself as much pleased with what he had witnessed.

Miss Ellen M. Freeman, formerly of Canning, N. S., is the fortunate recipient of the first silver medal awarded at the Provincial Normal School. The medal itself had not been received at the time of the Terminal Examination; but the name of the successful competitor (if that term is appropriate where there is no active competition on the part of particular students) was announced by the Principal to the assembled students in high terms of commendation.

At the March Examination for License, there were 170 candidates, of whom five worked for the Grammar School Class, 14 for First Class, 128 for Second Class, and 23 for Third Class. About 135 of these were in attendance at the Normal School the past session, the remainder were chiefly licensed teachers, seeking advance of Class. Sixteen of the student teachers examined were already holders of Provincial Licenses, and over fifty of them had previous experience in teaching.

In consequence of the partial destruction of the Legislative buildings, by fire, on the night of the 25th February, the Government was obliged to look about for a place in which the Session of the Legislature could be held. For some reason or other, the Provincial Normal School Building was selected, and at once a change came over the edifice dedicated to Education. Fortunately the Normal School Term was nearly at an end. The Government took possession of the large Assembly Hall, the Principal's Class Room and Private Room, the Library, Laboratory and Reception Room, and a host of workmen speedily converted these into a Hall for the Legislative Assembly, a Council Chamber, Rooms for Committees, Clerks, Telephone, etc., while the Speaker's Room and telegraph offices were fitted up in the long corridor. On the 9th of March the usual ceremonies of opening the Session took place in Assembly

Hall, which temporarily represented the Legislative Council Chamber. Meanwhile the Normal School was confined entirely to three class-rooms and the two cloak-rooms, one of which (*nefandum!*) has since been converted into a smoking room for the legislators. We have read of worse things. Classic fanes and sacred shrines have been used as barracks for rude soldiery.

The York County Teachers' Institute is announced to meet at Fredericton on the 20th and 21st of May.

For "the Truro Council" in the New Brunswick notes of last month, read "The Town Council," referring to the town of St. Stephen.

### QUEBEC.

The Protestant Academies and Model Schools of the Province of Quebec have been inspected and examined during the past month (March) by Messrs. Allnatt and Weir. There is an earnest desire on the part of the Protestant Committee of the Council of Public Instruction, in which is vested the management of the Protestant Public Schools of the Province, to increase, as far as possible, the efficiency of the Schools for superior education, especially that of the Academies, and to foster in them to a greater extent than heretofore the study of the ancient classics, so as to prepare young men for matriculating at our Universities. Hitherto, of late especially, there have been very few matriculants in the Universities from other than city High Schools or Academic Institutions in connection with the Colleges of the Universities. The Academies scattered over the Province have been serving as training schools for young men and women preparing themselves to obtain Diplomas as Teachers, an important object no doubt, but one which should be better attained by Normal Schools. At any rate, the study of Latin and Greek should not be altogether neglected, or made to occupy a very secondary place in our Academies. It is not simply that the numbers of classical pupils are few, but there seems to be little importance attached to such studies, and little time and attention are bestowed on them, on the part of the Head Masters of our Academies or their scholars. It is to be hoped that the efforts now being made to promote and encourage classical learning in the Academies of this Province will ultimately meet with success, and that this branch of a liberal education, the advantages of which are, if not altogether unquestionable, well established and depreciated only by those who are ignorant of them, will receive more attention, and be cultivated to a greater extent than heretofore in our Academies.

The Annual Report of the McGill University, Montreal, for the year 1879, has just been issued, printed by permission of His Excellency the Governor General, visitor of the University. It contains much interesting matter, indicative of the rapid growth and present prosperity of the University. A quarter of a century ago it held a very humble position with few students, few Professors, and scanty means, and it was hard to say whether the Professors or the students were the most numerous. Only those who know what it was *then*, and see what it is *now*, can fully appreciate how much of its present unprecedented prosperity is due to the talents and wise administration of its present Principal, to his world-wide reputation as a scholar in his own department, and enthusiasm and success as a teacher. It was indeed a new era for the Institution when Dr. Dawson entered on the duties of the Principalship, twenty-five years ago. It is no small matter too, in these days of doubt and infidelity, when men "are carried about with divers and strange doctrines, through philosophy and vain deceit," that such an Institution should be presided over by a gentleman not only of acknowledged ability and success in scientific pursuits, but also of well-known earnest piety, with all the weight of the highest moral character to influence the young men studying in the different faculties of the University. Parents can with more confidence send their sons to study at such an Institution without fear of their religious principles being unsettled.

The following statistics amply testify to the popularity of this Institution: During the current session, the students have been, in Law, 77; Medicine, 164; Arts (undergraduates), 93; Partial and occasional, 52; Applied (undergraduates), 19; Partial, 11; Total, 416; or deducting students entered in more than one faculty, in all 412. The Teachers in training in the McGill Normal School number 137, and the pupils in the Model School of the Normal School amount to 343. Including these and the students in the affiliated Colleges of the University, the numbers receiving educational benefits from the University figure up to 929. About 320 of the students and teachers in training in McGill College and the Normal School are from a distance, attached to the city by the

educational advantages of the University and its affiliated Institutions. At the meetings of Convocation held in March and May last, the following degrees were conferred: Doctors of Law, Honorary, 2, In course, 2; Doctors of Medicine, 37; Masters of Arts, In course, 3, Ad eundem, 2; Bachelors of Civil Law, 21; Bachelors of Arts, 11; Total, 78. There are many other matters mentioned in the Report, worthy of notice, did time and space allow, which might be inserted with interest in the JOURNAL, and which may be referred to on a future occasion. The progress made by the University during the past quarter of a century may in the words of the Report be summed up as follows: "1st. A body of nearly 1200 Graduates sent forth into the active work of life in all parts of the Dominion, and many of whom have already risen to high positions in the Church, in the Government, in professional life, and in scientific, literary and educational work. 2nd. The establishment of the new faculty of Applied Science, and the complete organization of the other faculties, with a staff of 34 Professors and Lecturers actually engaged in the work of instruction, of whom six are gentlemen of eminence in their departments, introduced to this country through the Agency of the University, and nineteen are graduates of the University, trained in our own halls, though some of them with the additional advantage of study pursued abroad. 3rd. The establishment of the McGill Normal School, which has conferred so important benefits on education by sending forth more than 800 teachers into our schools. 4th. The connection with the University of six Affiliated Colleges, all of them deriving benefit from it, and carrying on an important educational work of their own. 5th. The successful institution of University School Examinations, which, if at present only on a small scale, must eventually constitute a powerful lever for the elevation of education. 6th. The accumulation of considerable endowments of Chairs, of Scholarships, of Medals and Prizes, the completion of the College buildings in such a manner as to permit the work of higher education to be carried on satisfactorily in the faculties of Arts and Medicine, though the other faculties are still unprovided; and the accumulation of large collections of valuable physical and other apparatus, of extensive collections in Natural History and of a valuable Library."

### MANITOBA.

The regular quarterly meetings of the Board of Education and the University Council were held on the 4th ult. The Board appointed a committee, consisting of the Bishop of Rupert's Land, the Archbishop of Bonifacio, Rev. W. Cyprian Pinkham, A. A. C. Lanviere, M. P. P., Rev. J. Robertson, A. Kittson, M. P. P., Stewart Maloy, and E. W. Jarvis, to consider amendments to the school laws of the province, with the view of bringing them forward at the next session of the Legislature. The meeting of the University Council was largely attended, and there was a considerable amount of business transacted.

A letter was read from the General Council of Medical Education and Registration of the United Kingdom stating that the previous examination of the University of Manitoba is recognized as sufficient to enable persons to be recognized as medical students in connection with that body, and the Board of Studies to whom the letter was referred was instructed to communicate with other universities in the Dominion, with regard to their acceptance of our examinations.

With regard to the medals promised by His Excellency the Governor-General, it was decided that the silver medal be given to the student passing the best examination in the honor course for B.A., and the bronze medal to the most successful student in the previous examination.

The Council decided that the B.A. hood should be made of stuff, bordered with the usual rabbit skin and having a green silk cord, as distinctive of the University of Manitoba. The Board of Studies was requested to report upon a form of words to be used at the ceremony of conferring degrees.

The Protestant section of the Board of Education has recently sanctioned the plans and specifications for a new brick veneer school house for the south ward, Winnipeg, submitted by the city trustees. The architect is Mr. O. A. Barber, and the building it is thought will cost between \$3,000 and \$5,500. Mr. S. C. Briggs, B.A., has been appointed Inspector of Public Schools for the city of Winnipeg for the current year.

The Board of Education is laying off an unusually large number of school districts, and new school houses are in course of erection in many localities.

## Readings and Recitations.

### THE TWO GLASSES.

There sat two glasses, filled to the brim,  
On a rich man's table, rim to rim;  
One was ruddy and red as blood,  
And one was clear as the crystal flood.  
Said the glass of wine to the elder brother,  
"Let us tell the tales of the past to each other;  
I can tell of banquet and revel and mirth,  
And the proudest and grandest souls on earth  
Fell under my touch, as though struck by blight,  
Where I was king, for I ruled in might.  
From the height of fame I have hurled them down.  
I have blasted many an honored name;  
I have taken virtue and given shame;  
I have tempted the youth with a sip, a taste,  
That has made his future a barren waste.  
Far greater than any king am I,  
Or than any army beneath the sky.  
I have made the arm of the driver fail,  
And sent the train from the iron rail;  
I have made good ships go down at sea,  
And the shrieks of the lost were sweet to me;  
For they said, "Behold how great you be!  
Fame, strength, wealth, genius before you fall,  
And your might and power are over all."  
Oh! ho! pale brother," laughed the wine,  
"Can you boast of deeds as great as mine?"  
Said the water glass, "I cannot boast  
Of a king dethroned or a murdered host;  
But I can tell of a heart once sad,  
By my crystal drops made light and glad;  
Of thirsts I have quenched and brows I have lav'd;  
Of hands I have cooled and souls I have saved.  
I have leaped the valleys, dashed down the mountain,  
Flowed in the river and played in the fountain,  
Slept in the sunshine and dropped from the sky,  
And everywhere gladdened the landscape and eye.  
I have eased the hot forehead of fever and pain;  
I have made the parch'd meadows grow fertile with grain;  
I can tell of the powerful wheel of the mill;  
That ground out the flour and turned at my will,  
I can tell of manhood debased by you,  
That I have lifted and crowned anew.  
I cheer, I help, I strengthen and aid;  
I gladden the heart of man and maid;  
I set the chained wine-captive free,  
And all are better for knowing me."

These are the tales they told each other,  
The glass of wine and its paler brother,  
As they sat together, filled to the brim,  
On the rich man's table, rim to rim.

### THE SCHOLAR'S SWEETHEART.

BY EDGAR FAWCETT.

All day he toils with zeal severe  
On something learnedly polemic.  
From Harvard he returned last year,  
With bounteous honors academic.  
His parents name him but in praise,  
His little sisters quite adore him,  
And all the loving household lays  
Allegiance willingly before him.

What forms his labor weak by weak?  
They could not understand—oh, never!  
'Tis something eminently Greek,  
'Tis something eminently clever.  
But still his task, unfinished yet,  
He chafes with industry unflagging,  
And writes his treatise that shall set  
The heads of noted pundits wagging.

Is it of Homer's doubtful lines?  
Or yet some question, subtly finer,  
Of whether certain famous wines  
Were first obtained from Asia Minor?  
Is it of dialects impure?  
Is it some long-sought rule of grammar?

Is it old Sanscrit roots obscure?  
Is it that wearisome digamma?

But whether this, or whether that,  
Through fragrant fields, when work is ended,  
While curkly wheels the zigzag bat,  
And all the west is warmly splendid,  
He steals to meet in loving wise,  
With eager steps that do not tarry,  
A rosy girl, whose shining eyes  
Grow tender as she calls him "Harry."

What altered thoughts can she awake,  
This pearl of sweethearts, best and fairest!  
And what a contrast does she make  
To "Comments on the Second Aorist!"  
So strongly round him can she throw  
Her dazzling spells of sweet retention,  
'Tis doubtful now if he could go  
Correctly through his First Declension.

For while near mossy meadow bars,  
With spirit thrilled by sacred pleasures,  
He lingers till the dawn of stars,  
He lingers by the girl he treasures.  
This grave young scholar scarcely knows  
If Hector was a fighting seaman,  
If lofty Pindar wrote in prose,  
Or Athens lay in Lacedaemon!

—Harper's Magazine.

## Official Department.

### ONTARIO.

The success of the former regulations of the Minister of Education in utilizing High Schools for securing the satisfactory literary and scientific qualifications of intending teachers, and in confining the Normal Schools to their proper professional work, and creating facilities in every county for the like kind of training in the County Model Schools, have recently been extended so as to produce complete uniformity in the non-professional examinations of candidates for second and third-class certificates, in requiring that, after July next, all candidates for third-class certificates shall successfully pass the subjects prescribed for the intermediate examination in the High School, and that the County Boards of Examiners shall be relieved in the future from examining candidates of this class, excepting in so far as to their professional standing at the County Model School. This will relieve the County Councils from a large part of the expense attending the County Boards. The University course has been taken advantage of in order to supply equivalents by its examinations for first-class certificates of the higher grades "A" and "B," and for such first-class certificates the University course is now made quite as available for securing the high literary and scientific attainments required of teachers before they can obtain a first-class certificate of grade "A" or "B." Advantage is not only taken of the curriculum of all the colleges possessing University powers in this Province, but has been extended to the University of McGill College, at Montreal, to which so many students in the eastern part of Ontario are in the habit of resorting for superior education. (The Minister of Education has recognised the educational usefulness of this University in also extending to its graduates the eligibility of becoming a Public School Inspector.)

The practical results of these new regulations will probably be to relieve the Normal School, at Toronto, from the necessity of continuing its first division for giving general instruction to candidates for first-class certificates, and thus leave all the energy of the teaching staff for the professional instruction of candidates for second-class certificates.

The following are the regulations referred to above, which are all ratified by Orders in Council, dated March 20, 1880.

#### NON-PROFESSIONAL EXAMINATIONS FOR FIRST A. AND B. CERTIFICATES.

I. A candidate must obtain first-class grade C. before proceeding to grades B. or A., when such candidate may take options in either of the two following departments, namely:

1. Department of English language and literature, with history and geography.

2. Department of mathematics.

II. The Department will also accept the following examinations according to the curriculum of the honor courses prescribed by the University of Toronto, or the curriculum of equal standard in any college possessing University powers in the Province of Ontario, or in the University of McGill College, of Montreal, as equivalents, as hereinafter mentioned, namely:

1. Any candidate who shall have passed the examination for the first year as prescribed in the said curriculum, and shall also have obtained first-class honors in any of the departments of mathematics, classics, or

modern languages, shall be considered as having passed the non-professional examination of the Education Department for first-class certificate, grade B.

2. Any candidate who shall have passed the examination for the second year prescribed in the said curriculum, and shall also have obtained first-class honours in one of the departments of classics, mathematics, or modern languages, shall be considered to have passed the non-professional examination of the Educational Department for first-class certificate, grade A.

3. Any candidate who shall have passed the examination prescribed for the second year in the said curriculum, and who shall also have obtained first class honours in one of the departments of natural sciences, or of mental and moral science and civil polity, shall be considered as having passed the non-professional examination of the Education Department for a first class certificate, grade B.

4. Any candidate who shall have passed the third year's examination prescribed by the said curriculum, and shall also have obtained first class honours in either of the said departments of natural sciences, or of mental or moral science and civil polity, shall be considered as having passed the non-professional examination of the Department for a first-class certificate, grade A.

5. The foregoing shall take effect after the July examination of the present year.

#### NON-PROFESSIONAL EXAMINATIONS FOR THIRD-CLASS CERTIFICATES.

1. The regulations now in force for the non professional examination for third-class certificates are continued in force so as to apply to the examinations to be held in July, 1880.

2. After the non-professional examinations to be held in July, 1880, every candidate in order to become entitled to a third-class non professional certificate must successfully pass the subjects prescribed for the Intermediate Examination in High Schools, according to the general regulations of the Education Department prescribed for such Intermediate Examination; and the examinations for third class non professional certificates before the county boards shall thereafter be discontinued, and all the regulations with respect to the Intermediate Examinations shall be held to apply to the Intermediate Examination thenceforth substituted for the non-professional third-class certificates.

#### QUALIFICATION OF PUBLIC SCHOOL INSPECTORS.

The regulations under which certificates of eligibility for Public School Inspectors may be granted to honor graduates in the Faculty of Arts in any of the Universities situate in this Province upon the conditions therein mentioned, are hereby extended so as to include also similar graduates who may take the like Degree in the University of McGill College, at the city of Montreal, upon the like conditions as are imposed by such regulations.

The Legislative apportionment of thirty-three and one-third per cent. on maps, apparatus, prize and library books, etc., will be discontinued on 31st December, 1880.

ALEX. MARLING,  
Secretary.

#### NOTES AND QUERIES.

J. P. H.—The chemistry for second class non-professional certificates is combustion. The structure and properties of flame. Nature and composition of ordinary fuel. The Atmosphere, its constitution, and effects of animal and vegetable life on its combustion. Water, Chemical peculiarities of natural waters, such as rain, river, spring and sea water. Hydrogen, Oxygen, Nitrogen, Carbon, Chlorine, Sulphur, Phosphorus, and the more important compounds. Combining properties by weight and by volume. Symbols and nomenclature.

J. B., *Whitby*.—The holder of a First C. will not require to submit to a professional examination for 1st A. or B.

STUDENT.—The percentages for 2nd A. and B. respectively are 60 and 50 per cent. on each group, and 35 and 30 on each individual subject. The limit in Algebra is Easy Quadratics.

C. C.—Roscoe's Chemistry is authorized. For limit see above. The work for 2nd class candidates in History is Leading events of English and Canadian History, also of Roman History to the end of the second Punic War.

SUBSCRIBER.—Candidates may write for their non-professional and professional certificates at different times.

A candidate may receive a 1st A. or B. non-professional before passing his professional examination for First Class.

Hamblin Smith's proofs will be accepted.

#### 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.

EAST LAMBTON.—The regular half-yearly meeting of the East Lambton Teachers' Association was held at Watford on Thursday and Friday, 18th and 19th February. *Thursday*.—On motion duly seconded, Messrs. Donaghy, White, Sinclair and Ferguson were appointed a committee (with power to add to their number) to draft resolutions in reference to monthly examinations. The President in an ably written paper discussed the subject of home exercises, urging the value of such exercises as means of training pupils to habits of independence and self-reliance. A discussion of the subject followed, which was taken part in by Rev. Mr. Colwell and Messrs. Tulloch, White and Moshier, who all recognised the importance of giving such exercises as those referred to. Dr. McLellan, High School Inspector, was introduced by the chairman, and was greeted with hearty applause from the audience. The Association was addressed at some length by the distinguished gentleman mentioned, on "How to teach Euclid to Beginners." In course of this address very many useful hints were given to teachers respecting the teaching of this important subject. Mr. R. O. Whittet was appointed auditor for the Association, in room of Mr. Pierce. Prof. Harrison gave a lesson on elocution from 1:30 to 3:00. It is sufficient to say that the professor contrived to maintain unflinchingly for that time the interest of the audience, and to give teachers a great deal of useful information concerning the management of the voice, emphasis, inflection and other elements which go to make good reading. The discussion on "How to Teach Euclid to Beginners," which had been adjourned from the forenoon session, was resumed and taken part in by Dr. McLellan and several members of the Association. At this stage of the proceedings Prof. Harrison recited "Barbara Freitchie." His recital of this affecting little poem was received by the audience with hearty and well-merited applause. A paper on "Fourth Class Literature" was read by Mr. Duncan. The discussion which followed the reading of this paper was taken part in by Messrs. Mitchell, Whittet, Moshier, Morris, Stirret, McKeown, Ferguson, White, Norton and the President. *Friday*.—The meeting opened at 9 o'clock a.m., the President in the chair. Mr. W. E. Norton read a carefully prepared paper on Object Lessons, urging their very great educative value, and the importance of teachers devoting considerable part of their school-time to the teaching of them. After the reading of this paper some remarks were made on the subject of it by the President, Messrs. Whittet, White and others. Dr. McLellan showed his method of teaching Arithmetic to Beginners, and gave many useful hints as to how the elements of that important subject should be taught. This address was followed by one on "The Use of the Calculator," by Mr. J. S. Carson, I. P. S. for West Middlesex, who showed how very useful that instrument may be in the teaching of the fundamental rules of arithmetic when manipulated by a skilful teacher. Mr. Carson has the faculty of evoking a lively discussion on any subject which he introduces, and this time his remarks called to their feet in quick succession Messrs. Ferguson, Norton, Moshier, Hagel, Whittet, White, Newcombe and Dr. McLellan. The bone of contention was: "Which shall be taught first—Long Division or Short Division?" Dr. Harvey, of Watford, read a paper on "The Preservation of Pupils' Health," in which he dwelt very strongly on the necessity of proper ventilating apparatus in schools, of care with respect to the cleanliness of the persons and clothing of pupils, and on giving directions to them as to the proper kinds of food and exercise. The address was an excellent one, and gave evidence of careful thought and preparation. Mr. W. E. Norton read the report of the committee appointed to draft resolutions anent monthly examinations. The resolutions, which were discussed *seriatim* and adopted, were as follows: 1. That the papers for the next examination be sent to teachers, so that the examinations may be held on the last three teaching days in April. 2. That examination papers be prepared for fifth classes. [NOTE.—This is a "new departure," papers hitherto having been prepared for no class higher than the fourth.] 3. That in the opinion of this Association it is not advisable for teachers to change schools at examinations. (This is opposed to a resolution passed at a former meeting of the Association, and this latter was therefore rescinded.) 4. That third classes in analyzing sentences be required to divide them according to the extended scheme of analysis. 5. That the papers for the next examination be prepared by a committee consisting of Messrs. A. E. Wallace, M. Ferguson, T. White, W. E. Norton, and R. C. Whittet. Dr. McLellan gave a lesson in Algebra, illustrating by solutions some important principles, by the application of which the working of problems by what he characterized the "brute force method" is avoided. Prof. Harrison gave a short lesson in elocution, showing the manner in which Poe's "Bells" should be rendered. Dr. McLellan, at the earnest request of the Association, gave an address on "The Teacher's Work." On the evening of the 19th ult. a public meeting was held under the auspices of the Association in the C. M. church, Watford. The church was comfortably filled, Mr. Fawcett occupied the chair, and discharged his duties with much urbanity and geniality. During the evening Prof. Harrison gave several

readings, which were rendered in a masterly manner. The Professor sent the audience into perfect convulsions of laughter by his reading of "Our Pants." Dr. McLellan delivered his lecture "This Canada of Ours." This was certainly one of the most successful meetings of this Association. Mr. Barnes, I.P.S., was re-elected president of the Association, Mr. Thos. White, re-elected Vice-President, Mr. J. McD. Duncan, re-elected Sec.-Treas.; Mr. Jno. Pierce and Mr. R. C. White elected auditors. The next meeting is to be held in Forest. Mr. Miles Ferguson, Principal Forest Model School, was appointed a delegate from this Association to the Provincial Association, which meets in Toronto in August.

**NORFOLK.**—The Teachers' Institute for the County of Norfolk was held on Friday and Saturday last. The total number registered was 113. Mr. W. F. Cron took up the subject of map drawing. It had the great advantage of teaching through the eye of the pupil. The best form of teaching a class of children what geographical terms meant was of course to take the class out for a walk and let them study from nature; but this plan was not always convenient and was open to misconstruction by the public. Map drawing was the best substitute. He denounced the practice of tracing through semi-transparent paper as useless. If a correct map were required, it would be best to have the lines of latitude and longitude drawn first, but freehand drawing of maps was exceedingly useful. In painting maps, pupils usually make the paint far too thick. The names should be put on in characters as near like print as possible, not in writing. Mr. W. W. Pegg delivered a lecture on the teaching of reading to pupils. The speaker seemed to enter heartily into sympathy with the method of teaching word forms first and the alphabet incidentally. His form differed in one important respect from that of most who had attempted the method, in that he used the blackboard to a much greater extent. Thus he invented lessons of an original character, and "printed" them on the board while talking to the class; in fact, the pupils supplied the ideas and he wrote the signs. In this way a lively interest in word forms was excited among the pupils. This was in addition to the ordinary lessons from the tablets and books. He found that this method not only taught word forms rapidly, but also correct enunciation and natural expression. It also made a class remarkably thorough and intelligent. His pupils copied the lessons on their slates. *Afternoon Session.*—Mr. W. H. Weston, of Waterford, delivered an admirable lecture on Algebraic Factoring. Dr. Wadsworth then took up the subject of "Home work for pupils and teachers." He claimed that few students could work more than six hours a day if the work was really genuine. In a school which was energetically managed, the evils of over-work were apt to appear. Children were forced to perform tasks which overtaxed their strength and stunted their future physical and mental development. The difficulty was that the talented and active children were the very ones who were most injured by the forcing or hot-bed system, while the constitutionally indolent were not greatly benefitted by it. Mr. A. J. Donly, of Simcoe, then read an essay on the "School System of Ontario," which was listened to with marked attention. *Evening Session.*—At 8 p.m., the Association met at the Mechanics' Hall. Mr. A. F. Butler, B. Sc., Public School Inspector, of Elgin, addressed a large audience on the Kindergarten. The lecturer gave a delightful biographical sketch of Frederick Froebel, the distinguished inventor of the Kindergarten system. He explained the means adopted to develop harmoniously and pleasurably the faculties of young children. The leading principles were two—that children learn by doing, and the children love to do. All that was needed was proper direction—not repression. In fact, repression was foreign to the system. Rev. D. L. Brethour, of Simcoe, then delivered an address on Education. His strongest point perhaps was the necessity for the co-education of both mind and heart. *Morning Session.*—On Saturday the Institute was addressed by Mr. Butler, on Arithmetic. An Essay entitled "Hints to Teachers" written by Mrs. Dorothea Smith, of Woodhouse, was then read by the Inspector, and a hearty vote of thanks accorded to the lady who composed it. The following officers were elected for the coming year: President, W. W. Pegg, Esq.; Vice-President, Jas. Lumsden, Esq., M.A.; Secretary, Rev. G. Grant, B.A.; Recording Secretary, W. F. Cron, Esq.; Executive Committee, Messrs. Weston, Bennett, Knowles, Payne, Fisher and the School Inspector. Auditors, James Fulton and D. W. Parsons. The auditors for 1879 read a statement showing that the balance at the credit of the Association amounted to \$70.75. A resolution was passed condemning the proposed shortening of the Public School holidays. *Afternoon Session.*—Mr. Robert Grant, Model School Master, of Welland, then addressed the Institute on "Object Lessons." The address was a well-considered and well-delivered effort, and fully explained the principles regulating the subject. R. T. Livingstone, Esq., B.A., was then introduced, and gave a series of readings from Dickens and other authors, to the intense delight of the audience.

**NORTHUMBERLAND.**—The semi-annual meeting of this Association was held in the Collegiate Institute, Cobourg, on the 26th and 27th ultimo. Mr. D. J. Johnston, a valued member of the Association, having retired from the active work, was elected an honorary member, and invited to

take part in the proceedings. The early part of the session was given to Algebra, the discussion being opened by W. S. Ellis, B. A. Mathematical master of the Institute. A vote of thanks was tendered Mr. Ellis for his very able presentation of factoring. A discussion followed on School Discipline, the prevailing feeling being in favor of a judicious use of the rod in certain cases; but that, as far as possible, pupils should be swayed by love, rather than by fear of corporal punishment. In the evening, a very excellent lecture was delivered before the Association by Dr. Burwael, on "Schools and School Masters." On Friday, the subject of Reading was discussed, introduced by some excellent remarks from Mr. W. E. Sprague, followed by Mr. Ash and others. An able and critical analysis of Gray's "Elegy" was given by Mr. R. K. Orr, B. A., Head Master of Brighton High School. A discussion followed on the subject of literature for Third-Class teachers, the unanimous feeling being against the present requirements, and in favor of making the work somewhat similar to that required for second-class certificates, confined to one or two authors, and less fragmentary and discursive. The subject of Penmanship was very ably presented by M. Sawyer, a student of the Institute. He was succeeded by Mr. D. C. McHenry, M. A., in a practical address on "Waste of Labor in School Work." The subject was further discussed by the Inspector, Messrs. Ellis, Sprague, Johnston, and others. The Association requested Mr. McHenry to publish his address. Mr. W. M. Scarlett next took up the subject "History in Public Schools." He advanced some excellent ideas, particularly in reference to introducing the study to young pupils. He was requested to publish his address. A general "Question Drawer" exercise followed, including many practical questions, eliciting a very general discussion. On Friday evening the large Audience-room of the Institute was filled with an intelligent audience, to witness a series of chemical experiments, by Messrs. Oldham and Ellis, of the Institute. Mr. A. P. Coleman, Science Master, who was prevented by illness from taking an active part, stated that the experiments were those ordinarily performed by the members of his Intermediate Class. A hearty vote of thanks was presented to the gentlemen who had thus entertained the Association. The very superior "Glee Club" of the Institute were present during the entire proceedings, and greatly contributed to its success by their excellent music. The taste of the students in decorating the room elicited the admiration of all present. The President, Mr. W. E. Bartlett, conducted the business with his usual ability and tact. The Association adjourned, to meet in Cobourg in October next.

**GLENORA.**—The first half-yearly meeting was held in Alexandria on the 12th and 13th ult. Seventy members at present in charge of schools were in attendance. A good part of the time was devoted to the Limit Table of Studies prescribed for Classes I, II, III, and IV, as laid down on page 1 of the General Register. The subjects of the papers read and addresses given were "Duties of Teachers to Parents and Pupils," "High School Entrance Examinations," "Scanning of English Verse," "Art of Teaching," "Botany," "Elementary Chemistry," "Reading," "School Registers, Trustees' Returns, and Departmental Regulations," "Recitations," and, besides, the practical teaching of classes. The following officers were appointed for the current year: President, Dr. McDiarmid, Supt. Pub. Schools; Vice-President, Alex. Kennedy, H. M. Model School; Secretary, Arch. B. McDonald; Librarian, Alexander McDonald; Directors, Alexander B. McDonald, J. C. McCabe, R. Seldon, John A. Shea, Wm. C. Gorsling. The next meeting will be held on the 2nd and 3rd of September next. ARCH. B. McDONALD, Secretary.

**HALIBURTON.**—The semi-annual meeting of the County Teachers' Association was held at the village of Haliburton on the 19th and 20th Feb. The following is the programme followed:—Thursday—Opening address by Dr. Curry, President of the Association, on the "Relation of Teachers to Trustees, Parents, and Pupils"; Object Lessons, Mr. W. Loith; Object Lessons on Paper, Mr. T. T. Grimmer; Infinitives and Gerunds, Mr. E. J. Unger; How to make Study Attractive, Mr. G. S. V. Houston; Geography, Mr. T. T. Grimmer. In the evening, the Rev. Mr. Strachan delivered an address on Canada to a large and highly appreciative audience. Friday—Music, Mr. Geo. Goward; Reading to Senior Classes, Mr. J. S. K. Angus; Third Class Algebra paper, Mr. T. T. Grimmer; Duties and Influence of Teachers, Mr. E. C. Young; Question Drawer. CHAS. D. CURRY, B.A., M.D., Pres.; E. J. UNGER, Sec.

### Publishers' Department.

The House of E. B. BENJAMIN, of New York City, whose advertisement appears in our columns, is the oldest in that line of business, and one of the most reliable in the United States.

Owing to the large increase in business, Mr. Benjamin has been obliged to find larger premises, and has secured those fine four story warehouses, No. 6 Barclay, and No. 12 Vesey Sts., running through from street to street. Importing his goods direct from

the manufacturers in Europe enables him to offer better terms than any other house in the trade. Schools and other institutions requiring Chemical and Physical apparatus would confer a favor by sending for one of his catalogues before purchasing elsewhere.

## REVIEWS.

**PLANE TRIGONOMETRY AS FAR AS THE SOLUTION OF TRIANGLES;** by J. B. Cherriman, M.A., late Fellow of St John's College, Cambridge, &c., &c. FOURTH EDITION, with numerous examples and Logarithmic Tables Edited by Alfred Baker, M.A., Mathematical Tutor, University College, Toronto. Toronto: Copp, Clark & Co.

A want long felt by the student has at length been supplied by the publication of the above text-book. The original text by Prof. Cherriman, though quite practical, in that it approached by the shortest method the solution of triangles, was not quite as comprehensive as might have been desired. This point has been thoroughly attended to in Mr. Baker's edition, in which the additional matter has been worked into the various parts, in which it was required, in the shape of explanations, including the papers set at the University Matriculation and First Year Examinations. The whole forms a very neat and compact volume, and the publishers are to be congratulated on its appearance.

We must not fail, however, to notice the tables of Logarithms, which conclude the work, and which are compiled in so brief a space that they must be of great advantage for ordinary calculation.

The Trigonometry will form an excellent text-book for those preparing for the Matriculation and First Year Examinations, for the Examinations in Engineering, and those required for the Provincial Land Surveyors of Ontario.

**OUR HOMES.** By Henry Hartshorne, A. M., M. D. Pp. 150, 12mo.—Philadelphia: Persley Blakiston, 1880 This excellent little work is the ninth of the series of American Health Primers. It treats in a popular and readable style of the placin', constructing, lighting, warming, ventilating, water-supply, draining, and disinfecting of dwellings, with special reference to the climatic and other conditions of this continent. There are, besides, chapters on population and workmen's homes. Much valuable information is given, and the practical suggestions seem judicious. The great prevalence of typhoid fever, a preventible disease, in the rural districts as well as the towns of this country, shows how much our people are in need of instruction in these matters. The authors and publishers of books such as this, which aim at giving, in a cheap form, the conclusions reached by the students of sanitary science, deserve the thanks and the pecuniary support of the public.

**REMNANTS OF EARLY LATIN.** Selected and explained for the use of students by Frederick D. Allen, Ph. D., Professor in Yale College. Pp. viii. and 106, 8vo. Boston: Ginn and Heath, 1880. This is a small but scholarly treatise, calculated to be very useful to students of Latin and philology, and likely to be read with delight by all taking an interest in those subjects, who happen to become acquainted with it. It contains a short introduction, dealing with the peculiarities of early Latin, spelling, inflexion, and versification, and a selection from inscriptions and literary sources, of those "remains of the earliest Latin as are most important as monuments of the language." We have found many of these "remains" interesting, on account of their matter as well as their linguistic form, and can speak in high terms of the fulness and goodness of the notes. The work is well printed, and may be said to be creditable alike to American scholarship and typography.

**ELEMENTARY LESSONS IN ENGLISH.** Boston: Ginn and Heath. This work is written by Professor W. D. Whitney, of Yale College, and Mrs. N. L. Knox. It is in two parts. Part I. contains *no technical Grammar*. It is designed to give children such a knowledge of the English language as will enable them to *speak, write, and use it with accuracy and force*. It is made up of exercises to increase and improve the vocabulary, lessons in enunciation, pronunciation, spelling, sentence-making, punctuation, the use of capitals, abbreviations, drill in writing gender and number forms, and the possessive form, letter-writing, and such other matters

pertaining to the art of language as may be taught simply, clearly, and profitably. Many and varied oral and written exercises supplement every lesson. Part II. is an introduction to the "Essentials of English Grammar." It is a most excellent work. The same publishers have issued a *Teachers' edition*, containing the text and valuable suggestions for developing the lessons.

**BRAIN WORK AND OVERWORK.** Philadelphia: Presley Blakiston. This is No. 10 of the American Health Primers. It discusses in a plain, straightforward manner the causes of nervous exhaustion, and the natural processes for the restoration of nerve force. The author is not an extremist or a mere theorist. He takes a common sense as well as a medical view of the questions he takes up. Teachers will find it of great use in enabling them to teach practical hygiene to their pupils.

**ORATORY AND ORATORS.** By Wm. Mathews, LL. D., Author of "Getting on in the World," "The Great Conversers, and other Essays," "Words; their Use and Abuse," "Hours with Men and Books." Chicago: S. C. Griggs & Co. \$2.00. This is a complete cyclopedia of all that pertains to elocution, gesture, &c., and is arranged in an admirable manner. It contains numerous standard selections for declamation, in addition to the very valuable chapters on the theory.

**FIRST YEARS IN SONG LAND.** Root and Son, Chicago. This contains over three hundred songs for imitation practice, songs for the study of notation, songs for recreation, and songs and hymns for special occasions. It is specially adapted for day schools and juvenile classes. The book contains well graded lessons, with very clear instructions for teaching the subject.

**HALF A HUNDRED SONGS.** Davis, Bardeen, & Co., Syracuse, N.Y. These were written by a teacher for use in her own school. She selected popular airs and adapted the words to them. They are very well written, and are appropriate to the various events of school life.

**RODERICK HUME.** Davis, Bardeen & Co., Syracuse, N. Y. This is a story of a New York teacher, written by Mr. C. W. Bardeen, Editor of the *School Bulletin*. Mr. Bardeen has evidently been a most observant man, not merely of what goes on inside the school room, but of all the outside influences connected with the teacher's work. Most teachers will recognize the characters as old friends or foes. They will meet the different kinds of trustees, the ignorant, the officious, the intermeddling, the men who have relations in the teaching profession, the men who are trustees merely for the advantages their positions may throw in their way, and the good, practical, common-sense man who believes the well-trained teacher to be the best judge in matters relating to his own business. Teachers of many varieties meet the reader, some deserving of esteem for the qualities of their heads and hearts, some exhibiting traits of character not to be admired. The lamentable fact that teachers are not true to each other receives a clear illustration. Election contests, school-book agents, the intense rivalry of too many neighboring towns, and other weak points of the school system are faithfully portrayed. Teachers cannot fail to be greatly benefitted by reading the book. Roderick's address to his pupils is a compendium of the best points in the highest kind of school management. Miss Duzenberrie's victory and Vic Blarsten's closing remarks ought to teach lessons of warning to many teachers who are even the most in earnest about their work. Mary Lowe is a beautiful model of a teacher, and no one will be surprised that Roderick should make her his helpmeet instead of his assistant. It is a capital story, and we recommend it strongly to every Canadian teacher. Each one should get a copy for himself, as he will wish to read it more than once.

**THE ANALYST, A JOURNAL OF PURE AND APPLIED MATHEMATICS.** Edited and published by J. E. Hendricks, Des Moines, Iowa. The Analyst, as usual, contains a number of valuable and interesting articles—On the Variation of the Length of the Day, Quaternions, Spheres Cutting, Given Spheres at Same Angle, The Cissoid, Problems with their Solutions. It is well worthy the patronage of Canadian mathematicians.

**THE MATHEMATICAL VISITOR.** Edited and Published by Artemus Martin, M.A., Member of the London Mathematical Society, Erie, Pa. Mr. Martin judiciously divides his journal into Junior and Senior Departments; the former deals with Arithmetic, Algebra, Geometry, Trigo-

ometry, and the more elementary portions of Applied Mathematics, the latter is occupied with questions in the higher branches of the subject. Thus all interested in mathematics will have something to interest them. Both departments receive contributions from the best men in the United States. The work is entirely devoted to problems. One of its striking features is its truly admirable typographical execution, each page is a pleasure to look at—a fact which becomes perfectly astounding when, on one of the last pages, we find the following note: "This No. of the *Visitor* has been delayed some months in consequence of the sickness of the editor, who has done all the type-setting with his own hands. He is not a practical printer, and never had set up a stickful of type till last May or June." We strongly commend the *Visitor* to our Canadian mathematicians. It deserves, and we doubt not will obtain, a large circulation. Subscription, \$1 00 a year in advance—to be sent to Artemus Martin, Look Box 11, Erie, Pa.

**VICK'S FLORAL GUIDE.** The time for gardening is at hand, and the desire for beautiful flower gardens is largely on the increase. Mr. James Vick, of Rochester, N. Y., has done more than any other man to create this improved taste and supply the means of gratifying it. His annual Floral Guide contains hundreds of illustrations and full directions for the growth and culture of flowers. Those who wish reliable seeds should not fail to order from Vick.

**THE SCHOOL NEWSPAPER, VOL. VI.** Bound Copy. William Collins & Sons, London, Edinburgh and Glasgow. This volume, 1879, makes an interesting and instructive book. It does not discuss professional subjects, but is a compendium of the latest and most entertaining information and anecdote in the fields of travel, adventure, history, science, and natural history. Teachers who wish to give their pupils attractive information will find a mine in this volume.

**A MANUAL OF GOVERNMENT IN CANADA.** J. C. Stewart & Co., Toronto. This valuable book is written by D. A. O'Sullivan, Barrister. It contains an historical sketch of the constitution of Canada, the Federal system, the Constitution of the Dominion and its institutions, the Provincial Constitutions and their institutions, the people and their rights, the judiciary, law and the courts, &c. It is, in fact, a compendium of the foundations on which the liberty of a Canadian is based, and, either in its present or a smaller form, should find its way to our High Schools as a text-book.

**THE BOYS' WORLD** for February, 1880, published by James W. Allingham, London, Eng., contains Chaps. IV to XI of "Alfred of England, by Bronchy Beaumont, and the concluding chapters of "Arwick," by the same author. "Born to Victory," "Timothy Simple," and "Pina, a Dick of Dahomey," the other serials, are each continued through a number of chapters. Three short stories, "Chased by Wolves," "Homeward Bound," and the "True Story of Mazepa," together with "Our Comic Kaleidoscope," "Merry Moments," "Half Holidays, how to spend them," and an interesting paper on "Chemistry, its Marvels and Mysteries," and the usual "Notices to Correspondents," complete the contents, forming a full and readable number of the "Paper."

The same publishers send us No. 14 of the "BOYS' WORLD POCKET LIBRARY," entitled "Horatius, or the Dauntless Three, a complete thirty-two page story for one penny, also THE LADIES' WORLD, for February, which offers the following programme to its fair readers. Chaps. XVI. to XXIII. of "A True British Girl, by Mrs. E. Lewis," "Daisy's Faith," "Only a Young Man's Fancy," "Lost, but still Loved, and All for Love," four stories completed in the No., "Illustrious Women of the World," "Lessons of Mammas-in-law," "Things worth knowing," "The Amateur Dressmaker," "Varieties," and "Notices to Correspondents."

**HARPER'S MAGAZINE** opens with a carefully prepared paper on "The New School of Italian Painting and Sculpture," by J. J. Jarvis, wherein are to be found some severe criticisms on the low standard of modern art displayed in either of these branches of art. Lieut. Semly, U. S. A., furnishes an interesting account of "Life among the Arrapahoes," followed by J. Brander Matthews on "Obstinacy," a story by C. Moscholes; then Wm. Hamilton Gibson's "Winter Idyl," beautifully illustrated by himself; "Dakota Wheat Fields," C. C. Coffin; "An Irish Wake," J. S. Cloud, and "Vacation Aspects of Colorado," A. A. Hayes, jr., bring us to Chaps. XXIII. to XXV. of "White Wings," by Wm. Black; "Miss Beniah's Bonnet," by Rosa Terry Cooke; "Transportation by Railway and Ship canals," E. H. Dorby; "Karin," a Swedish Romance by Gustafson, Chapters XXVIII. to XXXI. of "Mary Annerly," and a comprehensive essay on the "Preservation of Hearing," by Dr. Sexton, follow each other in quick succession. The Editor a Chat from his "Easy Chair," with the "Literary and Historical Record," and the Drawer, with five short poems, among which we notice "The Sifting of Peter," by H. W. Longfellow, form the contents for March.

We have received from Strachan & Company the **CONTEMPORARY REVIEW**, which contains the following articles.—1. Mysteries of Administration in

Turkey. 2. A Sequel to "The Pedigree of Man," by Dr. Radcliffe. 3. The Duration of Parliaments, by Walter R. Cassels. 4. The Pillar of Praise, by Emily Pfaffer. 5. Bureaucracy and its Operation in Germany and Austria-Hungary, by Prof. Von Schulte. 6. The Vernacular Press in India, by Roper Lethbridge. 7. Hellenic and Christian Views of Beauty, by the Rev. B. St. John Tyrwhitt. 8. Ministerial Misstatements on the Afghan Question, by the Duke of Argyll. 9. Contemporary Books. I. Ecclesiastical History, &c., under the direction of Archdeacon Cheetham. II. Biblical Literature, &c., under the direction of the Rev. and Hon. W. N. Fremantle. III. Modern History, under the direction of Prof. R. Gardiner.

We acknowledge the receipt of the **NORTH AMERICAN REVIEW** from D. Appleton & Co. It contains the following.—1. McClellan's Last Service to the Republic, part 1, by G. T. Curtis. 2. Relations of Canada with the United States, by Sir F. Hincks. 3. The Failure of the Southern Pulpit, by Rev. David Swigg. 4. Gen. Grant and a Third Term, by Geo. S. Boutwell. 5. The Irish Land Question, by Chas. Ste. art Parnell. 7. Recent Books on Trade and Finance, by Edward Cary. I. Reciprocity, Bi-metallism, and Land-Tenure Reform. II. Free Trade and English commerce. III. The Financial History of the United States from 1774 to 1789.

We have received from the Leonard Scott Publishing Company **BLACKWOOD'S EDINBURGH MAGAZINE**, in which are the following articles:—1. Our American Senator on Ireland. 2. Bush Life in Queensland, Part IV. 3. The North-East Passage: Narrative of Lieutenant Palander, Swedish Royal Navy, Commander of the Exploring Vessel (with maps). 4. Reata; or What's in a Name. Part XII. 5. Conviviality. 6. The Afghan War. Passages from the Note-Book of a Staff-officer. 7. Metternich. 8. The Opening of Parliament.

The April **ATLANTIC MONTHLY** maintains the reputation of the magazine for variety and interest. It opens with the first instalment of a new serial story, "The Stillwater Tragedy," by Thomas Bailey Aldrich, which shows that the right hand of its author has not forgot its cunning. "The Undiscovered Country" is continued; and Rosa Terry Cooke furnishes "Clary's Trial," by Whittier, Crasset, Butterworth, Miss Sarah O. Jewett, and two anonymous writers. Harriet Preston writes about Madame Palanow, under the caption of "A Woman of Genius," Mr. Lothrop about "Coleridge as Poet and Man," Mr. Henry C. Angell on the "Records of W. M. Hunt," the painter, and Richard Grant White on "A Canterbury Pilgrimage." There are, also, an additional chapter of "Reminiscences of Washington," which is very readable, and an article on "Republican Candidates for the Presidency," which no one who wishes to understand the present state of politics in the United States should pass over. Reviews of three German novels and Jeffries' "Color-Blindness, together with "The Contributors Club," conclude a good number.

The **GENTLEMAN'S MAGAZINE** is, if we mistake not, the oldest now in existence. At any rate, the March number is the seventeen hundred and ninety first, and is to constitute a part of the two hundred and forty-sixth volume. It is remarkable that not only has it not fallen behind the age, but it has a freshness and life which we look for in vain in many of its young competitors. The contents are. An instalment of "Queen Copetua," a very good serial story, by R. E. Francillon, "Health Through Education," an article of great interest to teachers, by Dr. Richardson, the eminent testotaller and author of "Hygiene," "Tails, Limbs and Lungs," by Andrew Wilson, an interesting zoological contribution, illustrated with wood-cuts; "Norman and Saxon Blood Royal," by Thomas Foster, a valuable historical paper, "Voices that are Still," by the member for the Chiltern Hundreds, an entertaining account of the peculiarities of some recently deceased members of the English House of Commons, "The Edinburgh Review and its Contributors," by C. Peabody, based on the recently published correspondence of Mr. Macvey Napier, its second editor; "An Anglo-Indian Poet," by James Payn, which is an amusing review of a volume of English poems lately given to the world by a Parsee; "Love's Dawn and Death," a poem by G. V. K.; and "Table Talk," by the Editor.

## ORIGIN OF THE DESERT OF SAHARA.

A M. Largeau in 1874 visited the valley of the Igharghar, with the intention of branching off to Rhadames to study the commerce of that oasis and test the practicability of diverting to Algeria the caravans that come there by the central route from Soudan. He questioned the *chambas* on the causes of the drying of the great Saharan streams, and found that all agreed in saying that these dead rivers once ran full through a country more fertile than the Tell (the region north of the Atlas Mountain's crest), but could only explain it by legends more interesting than satisfactory.

M. Largeau gives the following explanation of the change: "It is known that pastoral people have always been great destroyers of forests, for they need large spaces of ground to feed the flocks that form their wealth, and to promote security against the wild beasts that lurk in forests. Even now the Algerian Arabs are seen firing the woods to enlarge the narrow limits imposed upon them by colonization. So, although the great Saharan streams have not been explored to their sources, yet it is known that they commence on the bare plateaux that are but the skeletons of heights once wooded and fertile. All accounts of the inhabitants of these regions agree on that point. Consequent upon the destruction of the forests, the periodical rains were replaced by rare and short though violent storms, the waters from which, instead of soaking in as in past ages, slip by on the rocky masses, carrying away the rich surface mold, and bring about the drying of the springs, and, as a direct consequence, of the rivers."—Lieutenant Seaton Schroeder, in *Popular Science Monthly* for February.