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The Canada School Journal.

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The Canada School Journal

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CANADA SCHOOL JOURNAL HAS RECEIVED

An Honorable Mention at Paris Exhibition, 1878.

Recommended by the Minister of Education for Ontario.

Recommended by the Council of Public Instruction, Quebec.

Recommended by Chief Superintendent of Education, New Brunswick.

Recommended by Chief Superintendent of Education, Nova Scotia.

Recommended by Chief Superintendent of Education, British Columbia.

Recommended by Chief Superintendent of Education, Manitoba.

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

"SUPPLEMENTARY READING."

There has been a universal stir among the educational publishers in England and America during the past two years in producing "supplementary" reading matter for schools. There has been a great amount of trash issued under this dignified heading, but there is also some of a very high class, as regards selections, arrangement, and mechanical execution. For the very little ones we strongly commend *Our Little Ones*, and *Little Folks' Reader*, both published in Boston; the former by the Russell Publishing Company, and the latter by D. Lothrop & Co. There is not the slightest question that *Our Little Ones* contains the finest engravings ever inserted in a child's magazine. It is edited by that well known friend of children, Oliver Optic, and is not only suitable as a child's "supplementary" reader, but would be undoubtedly the most charming means of enabling children to teach themselves to read before entering school.

There is another class of "supplementary" reading matter, designed for higher classes. Of this class we decidedly prefer the series published by Houghton, Mifflin & Co., of Boston, of which the "Longfellow Leaflets" are probably the best. The conviction that to give a pupil a sound knowledge of his own language and literature, is the highest single duty of a public school, so far as intellectual culture is concerned, is rapidly gaining ground among educational thinkers. These leaflets afford the very best means of accomplishing this desirable result. The choicest selections from the poets are printed on separate sheets for use by the pupils, and bound in one volume for the teacher. The arrangement is simple and excellent, the object is the very highest kind of culture, and the way in which the leaflets are printed and illustrated, is worthy of the reputation of a house that aims to be a model in all respects.

DELIBERATE LEGISLATION.

—We have on several occasions urged the propriety of delay in taking final action in reference to School matters in the leg-

islature. We suggested that important questions should not be decided during the session in which they are introduced. It is well that changes should only be made after the most careful consideration, so that what is done may not soon have to be undone.

It is with much satisfaction that we note the fact that Mr. Mundella, Minister of Education in England, has set an example in this respect worthy of imitation by those in authority in Canada. When he decided to introduce a new Code he first called together a committee of inspectors and others, from whom he received suggestions and assistance in preparing the proposed changes. Then he submitted his proposals to parliament, but instead of pressing them, or allowing them to become law, he withheld final action until they could be submitted to the public. He requested practical men to consider them, and give him the benefit of their views. In this way he has secured the counsel of the teaching profession through their associations, and the educational journals, and of the interested public through the newspapers. With such a host of practical advisors representing all classes and interests, Mr. Mundella will be able to meet parliament in 1882 prepared with an amended code, which will embody the best public opinion concerning the questions with which it deals.

We respectfully direct the attention of our Canadian Ministers of Education to the course pursued by Mr. Mundella. Hon. Mr. Crooks has already adopted the plan of submitting certain questions to teachers for their consideration before introducing them to parliament. We believe that he might do so to a greater extent with advantage. With conventions meeting in every county twice a year under the departmental regulations, with the provincial convention meeting annually, and with a legislative committee specially appointed by that association, and representing the three sections of the teaching profession, Ontario has unsurpassed facilities for obtaining the opinions of teachers in regard to any educational question. Fortunately in enlightened communities educational questions are discussed without reference to party, and the plan of submitting proposed amendments to the people, would have the effect of still further removing School matters from the arena of party politics. A School Bill would not then be a party measure, but a measure of the people. The following language used recently by M. Gambetta is appropriate in this connection. "We place the interests of the great question of public instruction above all personal quarrels, and it pleases me to see that, in the midst of the inevitable antagonisms of public life, all good citizens are united on this point. Of all the efforts of thinkers, writers, and statesmen, there is only one which is really efficacious, profound, and productive—viz, the diffusion of education, that social capital, the best of all capitals, which gives every man who comes into the world the means of gaining all other capitals, and thus of securing a position without force, without violence, without civil war."

RESOLUTIONS OF THE INSPECTORS' SECTION.

—The attendance of Public School Inspectors at the late Teachers' Convention in Toronto was more numerous and more representative of the whole of Ontario than at any convention for some years. Several important questions were brought before the Section, and the discussions were animated and thorough. In order to complete its work the Section continued in session on the day following the adjournment of the general association.

The most important question which engaged its attention was the training of teachers. There is no question of more vital importance than this, in connection with an educational system. Everything else may be of the most perfect character, but unless the individual teachers are well trained, earnest, and enthusiastic, comparatively feeble, if not positively evil results will be produced. Enlightened School Boards, wise legislation, fine school buildings and expensive apparatus, will fail to produce intelligent and well educated pupils, if the teachers are listless, indifferent and ignorant regarding the principles that underlie the correct methods of teaching. Even the inspectors feel themselves to be nearly powerless for good, when they are so unfortunate as to have a large number of these dead-weight teachers in their districts. They neutralize the best efforts of the inspectors in their schools, and at the Conventions and other gatherings of teachers held for professional instruction and inspiration.

Several resolutions relating to the training and certifying of teachers were passed by the Section. One of them recommended that the Second Class non-professional examination should be separated from the High School Intermediate. Three reasons were urged for this course. (1). That teachers should be examined in reading and penmanship, (2). That teachers should have no "language option" for the Natural Science group, (3). That a different standard should be adopted in reading the papers of school children, and candidates for teachers' certificates. We can see considerable force in the last two reasons, but we think that the best place to test both reading and writing is at the professional examination. The plan at present adopted of giving special instruction at the Normal Schools in writing, drawing, music, drill and calisthenics, and reading, is an excellent one. If the work is properly done the best results must follow. Proficiency in these branches and familiarity with the best methods of teaching them, have a good deal to do with deciding a teacher's fitness for his profession. We are glad to know that the Central Committee in conducting the professional examinations pay particular attention to these subjects, and also regard the ability to write and spell the English Language correctly, as an essential qualification in the make up of a good teacher. With regard to the second suggestion, the same paper now prepared for the Intermediate might still be used for the Second Class examination, if all Second Class Candidates were required to take the Natural Philosophy group. It is urged against this, that natural science is not so well taught in the High Schools as the foreign languages. If this be true, and we fear the charge

is correct, then means should be taken to improve the character of the science teaching. One of the first steps to be taken to bring about this desirable change would be to make it essential for teachers to take the science group. Classes would then have to be formed in High Schools and conducted in the best possible manner.

Another resolution directed the attention of the Minister of Education to the question of professional training in the Provincial Normal and Model Schools. The opinion was freely expressed by nearly all the inspectors present, that the Second Class teachers of the last few years are generally inferior to those who were trained at the Normal School in former years. The deficiencies specially complained of were, lack of, and frequently contempt for, what is known as "professional spirit;" and general haziness concerning the best methods, or any definite method, of teaching the elementary school subjects. If we accept the testimony of the inspectors, we must conclude that the young men and women of our country are sadly deficient in those qualities which a teacher should possess, or that some part of our training system needs strengthening, or sharpening. Without making any charges, we have no hesitation in stating that a Normal School which does not inspire teachers with higher motives and deeper enthusiasm, fails to accomplish its best purpose. We hold also that every teacher who leaves a Normal School should be definitely impressed with the idea, that there is one way of teaching each subject which is better than others, and that he understands the "more excellent way" sufficiently well to put it in practice. Considerable surprise was expressed at the fact that those First Class students in attendance at the Normal Schools were not compelled to practice in the Model Schools. To us it seems to be a pity that any one can obtain a First Class Certificate without being compelled to undergo special professional training in addition to that received before securing a Second Class certificate, but there is no reason why those First Class Candidates who attend the Normal Schools should be compelled to teach in the Model Schools, while those who study at other places are allowed to get just as high a standing without such practice. We would like to see all those who attend the Normal Schools to study for First Class Certificates compelled to practise extensively in the Model Schools, and we hold further that they should receive a thorough course of instruction in Psychology, the History of Education, &c. but we claim that all First Class Candidates should be compelled to take this course, or that those who do so should receive a special certificate.

The other resolutions concerning the training of teachers referred to the extension of certificates and the supply of teachers in those counties in which the number is too small. It was recommended that the County Boards of examiners be allowed to deal with the extension of third class certificates, and that they be permitted to require those applying for such extensions to write at some of the departmental examinations. This would be a relief to the Minister of Education, and would also be in harmony with his general practice of allowing the local authorities to deal with those questions which cannot injuriously affect the educational system of the country. If there was

any danger that local boards would abuse their power by granting too many extensions, it would be wise to retain the control in the Education Department. There is no such danger however, as the general complaint from inspectors seems to be, that too many extensions are granted by the present system. We heartily approve of the resolution asking that in those counties which can not obtain sufficient teachers, the best of the unsuccessful Intermediate Candidates be allowed to teach for a time, after being trained at the County Model School.

The 29th clause of the Amended School Act of 1879 was unanimously condemned, and its repeal waged strongly. The action of the inspectors was afterwards sustained by the united association without a dissentient voice. We are hopefully awaiting the time when this obstruction shall be removed from the pathway of educational progress.

The inspection of Mechanics Institutes occupied a good share of attention, the general opinion being crystallized in a resolution approving of their inspection by the inspectors as formerly, and urging that they should be fairly remunerated for their work.

PUBLIC SCHOOL TEACHERS' SECTION.

A good deal of important work was done by this section, although it was not all expressed in resolutions. Much of the time was spent in discussing the "over-supply" of teachers. It was somewhat remarkable that at the same time the Inspectors' section were giving their earnest attention to a difficulty which "stares some of them in the face," namely, the "under-supply" of teachers. The fact is, that the Intermediate results this year render it probable that teachers will be scarce throughout the Province for some time. The discussion in the Masters section took a more practical turn, however, than the topic would suggest, and resulted in a resolution favoring the certificating of teachers according to their success. We would be very glad to see any method adopted by which teachers could receive substantial recognition on their certificates for marked success in their profession. Would it not be possible to have blanks left on the back or at the bottom of the Departmental Certificate in which Inspectors could, from year to year, grade teachers in accordance with some uniform method of valuing professional skill? Such a plan is adopted in England.

The Masters passed a resolution concerning the representation of counties and other constituencies at the Provincial Convention, as follows:—"That each local association be entitled to three delegates, who shall be full members of this association; that any teacher or inspector may be a privileged member on payment of fifty cents, such privileged member to be entitled to all the privileges of this association, except voting at the election of officers, or when the yeas or nays are called; and for purposes of representation the section shall be considered a local association." This is an important question, and we endorse the views of the Section. More interest would be taken in the convention by local associations, if it were representative, and more attention would necessarily be paid to its conclusions.

MAKE TEACHERS' ASSOCIATIONS PRACTICAL.

Too often the meetings of the County Teachers Associations produce little practical result. They ought to secure two objects—the awakening of genuine enthusiasm in prosecuting the teacher's work, and the dissemination of improved methods of teaching. The work done with the latter object is generally of a fragmentary kind, and there are no sufficient means for recording and placing permanently in the hands of each teacher the suggestions made or the decisions arrived at in conventions. Teachers cannot get all the good points out of an address by merely listening to it and the discussions arising from it. Even if they could do so at the time, they would be pretty certain to forget some of them. Some plan is needed which will systematize the work done at the conventions, and at the same time provide a ready means for preserving a permanent record of the work done at them. We have not seen anything which promises to secure both these desirable results so fully, as the plan adopted by the Toronto Teachers' Association. A text-book on education, or methods of teaching, is selected and is first read by all the teachers in the city. This book, or certain portions of it, then forms the basis of careful discussion at the next convention. Amendments or additions are made to the views of the author, and these are noted on blank pages interleaved through the book. Each teacher, or each school possessing one of these books, it is always easy to find the approved method of teaching any subject. This book becomes the most modern work on the subjects of which it treats, provided the leading members of the Association keep abreast of the times. Each member has a record of all that is valuable in the work of the Association, and even absent members may easily gain possession of the new ideas advanced by their fellow teachers. The plan is worthy of a trial.

UPPER CANADA COLLEGE.

The Minister of Education promised in the House last session that he would make certain changes in the staff and general management of Upper Canada College. The revolution has begun. Principal Cockburn has resigned. After twenty years of service, he said good-by to his boys on the 30th of September, and retired from the teaching profession. We are glad that he is able to do so with such bright prospects for a happy future. He was an able man, and he has left his mark in Canada, but he might have made even a deeper and more lasting impression, if he had not kept himself aloof from his brethren in the teaching profession. The fact that his school was not a part of the general system of Public Schools, doubtless had its influence in causing him to be reserved, but both he and his fellow teachers lost by his seclusiveness.

His successor is too well known to require any eulogy. He is as thoroughly acquainted with the Schools of Ontario, as any other man. He understands Canadian Sentiment and is in harmony with it. He is a skillful teacher, and a clear-headed, practical man. Whatever may be the design of the Minister of Education regarding the College, we may rest assured that it

will be a Canadian institution in future, in spirit as well as location.

In the appointment of Mr. Buchan, one change is distinctly indicated. Classical teaching will no longer be the supreme aim of the College. The English language and its literature, will be placed in its rightful position at the head, with Moderns and Science as its immediate neighbors.

We do not believe that the country would be willing to sustain Upper Canada College as a mere High School even under Mr. Buchan's management. We have no idea that this is what Mr. Buchan wishes it to become, however.

The CANADA SCHOOL JOURNAL was the first to suggest that the College should be set apart for the higher education of women. Mr. Goldwin Smith fathered our suggestion, although he had no right to be more than its god-father, and many have approved of the idea. We do not relinquish the hope that, when we are ready for it, the government will supply an institution for the higher education of those women in our country who wish to advance beyond the Collegiate Institute lines; but if Mr. Buchan aims to found a provincial school, in which the sons of those who are determined to send their children from home to be educated, shall receive a thoroughly practical training, he will receive our support. Other provision can be made in due time for our women.

We have no sympathy whatever with the "jingo" element who decline to send their children to a Public School through false pride. We have always held that as a rule, boys should attend the High School or Collegiate Institute in their own vicinity. There is, however, a large class of men in Canada who are compelled to be frequently absent from home, or who are so engrossed in business, that they have not the time to take a parent's proper and essential interest in the direct work of educating their sons. They are willing to pay well for the right kind of supervision, which they are not themselves able to give, and there are quite a sufficient number of them to support any school which will prove itself to be the best boarding-school in the country. With its large endowment, with its government aid, and with its prestige, and associations, Upper Canada College under its new Principal should make itself one of the needs of Ontario. It is, however, a grave question for the consideration of the Government, to decide how long the College should continue to receive aid from the School Funds of the Province. This question will doubtless soon be forced upon their attention, and unless they can show that it is a necessary part of the Public School System, only one answer can be given to it.

The appointment of Mr. Buchan leaves only two High School Inspectors. It is the intention of Mr. Crooks to have the High Schools inspected only once a year in future, so that two High School Inspectors will be sufficient. The Intermediate examination will, in most respects, form a substitute of one inspection. We congratulate Mr. Crooks on making a reduction in the expense connected with High Schools, without reducing their efficiency.

NEEDLE-WORK BY BOYS.

—We published last month an article, written by Mr. Hughes, Public School Inspector in Toronto, recommending

that boys as well as girls should be required to do needle-work in the Junior classes in Public Schools. In confirmation of his views, we note that the new Code introduced in England by Mr. Mundella proposes to make it *compulsory* for boys under seven to do the same needle-work as girls.

Why do not teachers try to teach this subject as they do others? Why should not all the pupils of a certain grade do the same kind of needle-work, as they write in the same copy-book and work the same rules in arithmetic? In England, and some of the United States cities, a whole class is found working at the same kind of needle-work as they do with their other lessons. The teacher uses the black-board in explaining a stitch or a cut, or the method of attaching and adjusting parts of a garment just as she does in teaching the correct formation of a letter, or the solution of a problem. As a guide to those who would like to systematize the work of teaching needle-work, we give the programme in this subject proposed by the New English Code.

NEEDLE-WORK SCHEDULE.

BELOW STANDARD I.

Boys and Girls.

Needle drill.—Position Drill.

Strips (18 inches by 2 inches) in simple hemming with coloured cotton, in the following order, viz. —1. Black. 2. Red. 3. Blue.

Knitting-pin drill.

A strip knitted (15 inches by 3 inches, in cotton or wool.

STANDARD I.

1. Hemming, simple or counter, seaming, felling, *plaiting*. Any garment which can be completed by the above stitches, e. g., a child's plain shift or pinafore.

2. Knitting. 2 needles, plain and purled, e.g., a strip on which to teach darning in Girls' Upper Standards, or a comforter or muff-antee.

STANDARD II.

1. The work of the previous Standard with greater skill, and sewing on strings. Garment, an apron, pinafore or plain shift *plaited* into a band.

2. Knitting. 4 needles, plain and purled, e.g., wristlets or muff-antees.

STANDARD III.

1. The work of the previous Standards with greater skill, and, in addition, stitching garments, a shift or apron *plaited* into a stitched band.

Herring-bone stitch. The stitch only on coarse canvas (cheese cloth) or flannel.

Darning, simple. } On cheese-cloth or calico.
Marking, simple. }

2. Knitting. 4 needles, e.g., a sock.

STANDARD IV.

1. The work of the previous Standards with greater skill, and, in addition gathering, stroking, setting-in, *herring-bone*, marking, button-hole, sewing on button. Garment, a plain night-shirt, night-gown, petticoat, or child's frock, either in calico, coloured shirting, or flannel.

2. Darning, plain (as for thin places), in stocking-web material and woven fabric.

3. Knitting. 4 needles, a man's sock or girl's stocking.

STANDARD V.

1. The work of the previous Standards with greater skill, and, in addition, tuck run. Garment, a night-gown or child's frock.

2. Knitting. 4 needles, a knickerbocker stocking.

3. Darning, simple, and a hole in stocking-web material.

4. Patching in calico and flannel.

5. Cutting out any garment such as a child in Standard III. can make up.

STANDARDS VI. AND VII.

1. The work of the previous Standards with greater skill, and whip stitch, setting-on frill, *knitting*, coral-stitch (feather stitch). Garment, a night-dress with frill, or baby's robe, or child's fancy pinafore,

2. Darning, plain and Swiss, and grafting on stocking-web material.

3. Patching and darning on woven fabrics, e.g., calico, flannel, serge, &c.

4. Knitting. 4 needles, a long stocking with heel thickened.

5. Cutting out any under-garment suitable for making up in Standard IV.

The work printed in *italics* is optional.

—The article on History in the current series of the *Encyclopedia Britannica*, though an obviously incomplete treatment of the subject, nevertheless embodies much clear and valuable thought. The distinctions between history and tradition, history and myth, history and the simple record of facts and dates, are lucidly pointed out. Civilization alone provides the proper subject matter of history. In his state of primitive savagery, man takes no note of his social relations, and spends but little labor in recording the seemingly disconnected events which make up the life of successive generations. The stagnant existence of some semi-civilized people provides conditions scarcely more favorable for the development of genuine history. There is sequence of time and succession of generations, but little or no social evolution and progress. Events stand to one another in the relation of dull monotonous similitude. The spirit of history is wanting in "the vast and vacant annals" of India, China, and Egypt. True history does not date further back than the historical books of the Old Testament. The Greek records overlap the Jewish, while the Roman follow in close succession. For long ages civilization and history dwelt exclusively on the shores of the Mediterranean sea. The distinction between the standard types of ancient and modern historical composition is admirably portrayed. The former is at once uncritical and artistic. Imagination and passion play quite as conspicuous parts as research and reason. But in some of the early, though not the earliest of the Greek and Roman historians, such as Thucydides and Tacitus, without any sacrifice of artistic form and coloring, a more philosophical style of writing and treatment was introduced. These great writers represent the standard of history which remained unaltered almost to our own day. Careless as regards research "its aim was perfection of literary form, weight and dignity of language, depth of moral and sagacity of political reflection." While the Greeks were the inventors of this species of history, displaying therein the same delicate appreciation of beauty and artistic symmetry as are revealed in their sculpture, their painting and their poetry, they excelled their Roman imitators far less as historians than as sculptors, painters and poets. The author (Dr. Morrison), acutely accounts for this fact by the robust national life, the loftier and more vigorous patriotism which characterized Rome. The genesis of the new or sociological type of history is elaborately traced. Its qualities are almost the precise opposites of those which distinguish the type superseded. Patience and minuteness of research are its crowning features. Some of the essayist's conclusions are too sweeping. He regards Gibbon as the only historical writer anterior in date to the end of the 18th century, whose work has not been superseded by the superior insight and research of subsequent historians. Our readers however would do well to read this instructive essay for themselves and form their own conclusions.

Canadian teachers should be thankful that their lot is not quite so bad as that of their co-workers in some other lands. The following advertisement was recently inserted in an English paper:—"Mistress; Gardener; Choir. Wanted, at Michaelmas, certificated Mistress, for Mixed School. Must be thorough Churchwoman, good disciplinarian, and successful Teacher. Sunday-school. Good house (mainly furnished), and garden. Salary £40, and half grant, which this year is £22 14s., but might be much increased. *Husband as Gardener, &c., and sing in choir. Wages about 12s. a-week.* Address, Vicar."

—It has so far been reserved for a Boston author, Mr. Francis Parkman, and a Boston firm, Messrs. Little, Brown & Co., to write and publish the most exhaustive and scholarly works relating to the discovery and early history of Canada. We refer our readers to the advertisement of Little, Brown & Co. in this number of the JOURNAL. In addition to Mr. Parkman's works, they publish some exceedingly valuable books for teachers. We think those by Mr. Bartlett to be of special interest and importance.

Official Department.

PROVINCIAL AND COUNTY SCHOOLS.

TEACHING OF HYGIENE IN PROVINCIAL NORMAL SCHOOLS.—FURTHER REGULATIONS RE COUNTY MODEL SCHOOLS.

The Department of Education, upon consideration of reports of the Honorable the Minister of Education, have ordered that the following regulations with reference to the teaching of Hygiene in the Provincial Normal Schools, and further regulations in regard to County Model Schools be adopted.

NORMAL SCHOOLS.

Instruction in the teaching of Hygiene in the Provincial Normal Schools.

In instruction in hygiene in each of the Normal Schools, there shall be included teaching lessons on temperance, the teacher using such books, amongst others, as the "Temperance Lesson Books," by Benjamin Wood Richardson, M.D., and "The Temperance Cyclopaedia," by the Rev. William Reid, and also instructing in the chemistry applicable to this subject.

COUNTY MODEL SCHOOLS.

Further Regulations.

The conditions required by the regulations, being Chapter 6 of the Compendium, as now amended, will be strictly enforced, and must be fully complied with on and after the seventh day of July next, and especially in reference to the prescribed qualifications of the Head Master and two Assistants.

2. Instead of two terms of two months each in the academic year, there shall be two terms of three months each; the first shall begin on the morning of the first Tuesday in the month of September in each year, and shall end on the afternoon of the first Friday in the month of December. The second term shall begin on the morning of the second Tuesday in the month of January, and shall end on the afternoon of the second Friday in the month of April.

3. The teachers-in-training shall employ their time during the session of the Model School according to a time-table, to be drawn up by the Principal. In this time-table provision shall be made, not only for formal instruction in education and other subjects during at least two hours per diem, but also for the employment of teachers-in-training for at least three additional hours daily in observing and practising teaching. About one hour per diem should be devoted to giving instruction in school organization, government, and methods of teaching. It is recommended that about eighteen

hours per term should be devoted to teaching reading and elocution, about the same to mental arithmetic, about seven hours to school law and regulations, and about six to school hygiene. The timetable shall be submitted to and approved by the Public School Inspector, and a copy of that drawn up for the first session shall be transmitted to the Department before the session is half over.

4. The Public School Board is required to employ, during the period of each of such Model School terms, a duly qualified assistant teacher to take the place of the Principal of the Model School in teaching the ordinary classes, in order to relieve the Principal of such duty during the period of at least one-half of the school hours in each day.

5. The Principal of each Model School shall employ at least one-half of the school hours of each day during each of the said terms in the instruction and supervision of the teachers-in-training.

6. The Principal of each Model School shall give instruction in penmanship, letter-writing, and English composition to such teachers-in-training as need them, and County Boards of Examiners shall withhold certificates from candidates who are deficient in any of these subjects.

7. Each Model School shall be provided with a separate room for Model School purposes, and this is to be an essential condition in future.

8. The inspection of County Model Schools shall be governed by the regulations now in force, and which were approved on the 30th September, 1879.

9. Public School Inspectors shall report, in accordance with No. 6 of such regulations, to the Education Department immediately upon the expiry of each term, instead of once in each year. If such report is found satisfactory by the Minister, the Public School Board will be entitled to receive for that term in respect of such Model School, one-half of the amount apportionable by the Education Department in support of each County Model School, out of the grant of \$150 annually voted by the Legislature for that purpose, and by Section 11 of the School Act of 1881 the County Council is also required to provide in aid of each Model School in such county an amount at least equal to such amount apportioned by the Education Department.

10. The County Board of Examiners may, by resolution of such Board, require from teachers in training in each County Model School, the payment of a fee for instruction therein, but not to exceed five dollars per term.

11. The Legislative and Municipal grants, as well as all sums from fees for instruction, shall be payable to the Public School Board with the view of enabling such Board to maintain the County Model School at the standard prescribed by the regulations, and the classes of the Public School at the same time in full efficiency.

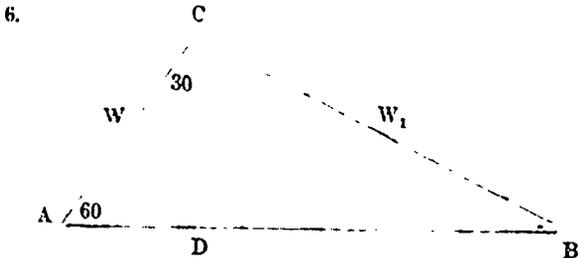
12. The foregoing shall take effect from the first day of January, 1882.

Mathematical Department.

SOLUTIONS TO INTERMEDIATE EXAMINATION PAPERS, JULY, 1881.

(Continued from last month.)

NATURAL PHILOSOPHY.—Continued.



Drop CD perpendicular on AB. Then the tension of the string to the power in the inclined plane CAD = power in plane CDB, acting (1) parallel to the plane; (2) parallel to the base. Let W be the weight on AC, and W₁ on CB; also T = tension of string. Then (1) taking A = 60°

$$T:W = CD:AC = \sqrt{3}:2$$

$$T:W_1 = CD:BC = 1:2$$

$$\therefore W:W_1 = 1:\sqrt{3}.$$

Also (2)

$$T:W = CD:DA = \sqrt{3}:1$$

$$T:W_1 = CD:DB = 1:\sqrt{3}$$

$$\therefore W:W_1 = 1:3.$$

7. See Smith's *Hydrostatics*, chaps. II. and IV.

The pressure on the table will be increased by the weight of the wood. The pressure on the bottom and sides will be increased, since the wood displaces some of the water and increases the depth of the column of water. In the second case no change would take place in the pressure on the table.

8. See Smith's *Hydrostatics*, pp. 66, 89.

As the bell sinks the mercury rises, and vice versa. In the pump, the mercury falls as the vacuum becomes more and more perfect, i.e., as the water rises. See Smith, p. 55.

9. The pressure on the piston = weight of water in pipe

$$= 12 \times \left(\frac{9 \times 22}{7} \right) \times \frac{1}{144} \times \frac{125}{2} = \frac{33000}{32 \times 7} = 147.321.$$

See H. Smith's *Hydrostatics*, p. 75.

CHEMISTRY.

1. (1) Potassic nitrate and hydric sulphate produce hydric nitrate and hydric potassic sulphate.

Potassium = 39.04, Oxygen = 16.96, Hydrogen 1, Sulphur = 31.98. — Roscoe and Schorlemmer (1878).

(3) H₂SO₄ and HNO₃ would redden litmus or any vegetable blue. KNO₃, a neutral salt, would not affect the litmus.

2. See Roscoe's Primer, pp. 61, 65 and 95. Taking the combining weights in round numbers

$$H_2SO_4 = 98, HNO_3 = 63. \text{ Hence}$$

$$98 \text{ lbs. } H_2SO_4 \text{ give } 63 \text{ lbs. } HNO_3$$

$$\left(\frac{98}{63} \times 3\frac{1}{2} \right) \text{ lbs. } = 3\frac{1}{2} \text{ lbs. } HNO_3$$

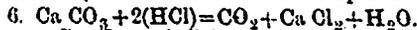
$$5\frac{1}{2} \text{ lbs. } H_2SO_4. \text{—ANS.}$$

3. See Roscoe's Primer, p. 57. The lamp is not safe when (a) exposed to a current of air moving at 8ft. per second, (b) when the gauze becomes heated up to the point of ignition of fire-damp. The metallic gauze acts as a first rate conductor of heat, and cools the flame below the temperature of ignition before it can reach the external gas.

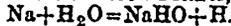
4. To prepare hydrogen. See Roscoe's Primer, pp. 25 and 96. This will do for class purposes. Pure hydrogen is best prepared by the electrolysis of distilled water.

To prepare nitrogen. See Roscoe's Primer, p. 12. A little alcohol will do instead of phosphorous. This is the simplest method, but the gas is not pure. Pure nitrogen may be obtained by heating a concentrated solution of ammonic nitrite (NH₄)NO₂ = N₂ + 2H₂O. The simplest way is to act on ammonia with chlorine 8NH₃ + 3Cl₂ = N₂ + 6(NH₄)Cl, but the experiment is dangerous, as NCl₃ may be formed, which is frightfully explosive. Experiments with hydrogen should show its extreme lightness, peculiar flame, explosiveness when mixed with air or oxygen, insolubility in water, effect on the voice, occlusion by metals, etc. Our space forbids extended descriptions. There are few experiments possible with nitrogen, and these are chiefly negative, showing what nitrogen will not do.

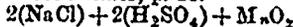
5. See Roscoe's Primer, p. 66. Equal weights ignited in pure oxygen produce the same weight of carbonic acid and nothing else. Hence they are identical in their composition.



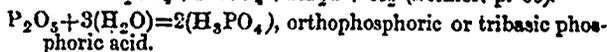
See Roscoe's Primer, p. 45.



See Primer, p. 23.



$$= Na_2SO_4 + MnSO_4 + 2H_2O + Cl_2 \text{ (Primer, p. 68).}$$



See Primer, p. 12. This is the liquid in the dish after the white fumes (=P₂O₅) have been absorbed.

7. Flame may be defined as gas or vapour heated to a temperature at which it becomes visible. Solid particles usually emit light when they are raised to a red heat from 426° C. to 538° C. (800° to 1,000°

Fah.). Gases, on account of their expansibility must be raised to a far higher temperature; consequently the point of visibility is seldom reached, unless the gas itself is combustible, i.e., capable of producing by combination with the oxygen of the air the requisite degree of heat. One of the essential conditions of flame, then, is the presence of a combustible vapour, as gas, or of a liquid or solid, capable of being converted by the heat of the combustion into a combustible gas or vapour, as alcohol, oil, fats, candles, etc. A diamond, or a piece of dense, thoroughly carbonized charcoal, will burn away in oxygen with great intensity, but with a steady glow and no flame, because the carbon is not capable of being converted into vapour, while sulphur burns with a bright, large flame, because the heat converts it into vapour before the combination takes place.

A gaseous matter is essential to flame, so solid particles, suspended in the flame and brought to a white heat, are essential to its luminosity. The flame of hydrogen is the hottest known, but it is all but invisible, from the absence of solid matter. It may, however, be made visible by blowing very fine powder through it.

When sulphur is burnt in oxygen, it does so with a pale violet light. Phosphorus so treated gives forth dense white fumes of the most intense brilliancy; the reason of these phenomena being, that sulphur, in combining with oxygen does so to form sulphurous anhydride, SO_2 , which is gaseous at this temperature; while the phosphorous under like circumstances, forms phosphoric anhydride, P_2O_5 , which remains for a short time in the solid form, and being suspended in the flame in a very minute state of sub-division, becomes heated to so high a temperature as to emit a beautiful white light.

The brightness or illuminating power of a flame depends mainly on three things:-

(1) *On the temperature of the gases which are combining together to produce the flame.* P. burns in Cl. with a very feeble light, but if the Cl. and P. vapour be both heated the combustion takes place with a dazzling white light.

(2) *On the density of gases.* Dr. Frankland has shown that the pale, smokeless flame of a spirit lamp may, by condensing the air around, be made as bright as that of coal gas, and that by pushing the condensation far enough, it may be even rendered smoky. (See Tyndall's Heat, 4th ed., pp. 46-52).

(3) *On the presence of solid particles within the area of combustion.*—All illuminating bodies in use, as coal gas, oil, wax, tallow, fats, etc., are hydrocarbons—i. e. they consist of a mixture of various compounds of carbon and hydrogen in different proportions, having the general formula $\text{C}_m \text{H}_n$. Directly we apply heat the oxygen of the air seizes on the hydrogen of the hydrocarbon producing the heat of the oxyhydrogen flame. The carbon is set free in innumerable solid particles, which are raised by the burning hydrogen to a state of incandescence. It is to these white-hot particles of carbon that the light of coal gas, our lamps, etc., is due. (Condensed from Kemshead's Chem.)

8. See Roscoe's Primer, p. 96:

65 lbs. Zn give 161 lbs. Zn SO_4
 $\frac{2}{3} \times 3\frac{1}{2}$ lbs. Zn give $3\frac{1}{2}$ lbs. Zn SO_4
 $1\frac{1}{2}\frac{1}{2}$ lbs. Zn.—Ans.

Correspondence.

STRONG AND WEAK VERBS.

(As Mr. Mason's Grammars are so deservedly popular in Canada, we are sure our readers will be pleased to read his treatment of the above subject. The following letter was written to the *Educational Times* in reply to the Rev. Canon Daniel, whose work Mr. Mason had previously criticized.)

SIR,—In his reply to my criticism on his treatment of Strong and Weak Verbs, Canon Daniel makes a charge which I claim permission to repel, and asks a question which I should like to be allowed to answer.

The charge against me is one of unfairness, or something worse, and is couched in the following terms:—

"Mr. Mason's mode of attack is, to say the least, somewhat extraordinary. He goes out of his way to assume a misprint in my book, and then, with much self-satisfaction, proceeds to demolish the errors that result from his own omission. He assumes that I explain the past tense of weak verbs by reduplication. I do not

such thing. What I explain by reduplication is the distinctive ending of the past tense of weak verbs. That ending is *-ed, -d, or -t*, a vestige of the reduplicated past *did*."

I am aware that it is a common device in controversy, for the writer who is criticized to lay hold of some subordinate matter, as to which he thinks he has caught his adversary tripping, dangle this before the eyes of the reader as if it were the sum and substance of the whole affair, administer an indignant rebuke to the critic, and ride off with the honors of war. I should be sorry to think the Canon capable of doing this deliberately, but in his haste he has done what comes to much the same thing. Any one who takes the trouble to read carefully what I wrote, will see that it is a complete misrepresentation to state that "my attack" is based upon an assumed misprint. My criticism was mainly directed against the Canon's theory as to the way in which the vowel change in strong verbs is connected with reduplication, and his heresy on the subject of mixed preterites. The assumed misprint has nothing to do with either of these points. It was only by the way that I made the suggestion as to the misprint, as a possible clue to the explanation of the following very puzzling paragraph:—

"The origin of the distinctive ending of the past tense of weak verbs is to be found in the ancient mode of forming the perfect tense by reduplication, e.g., Lat. *curro*, I run, *cucurri*, I have run. The purpose of reduplication was obviously to give the impression that the action is thoroughly done. In Latin and Greek, instances of reduplication are common, but in English the only surviving traces of it are *did*, the past tense of *do*, and *hight*, the past tense of *hatan*, to be called. This reduplication was accompanied by a modification of the root vowel. In modern English the reduplicated syllable has been dropped, but the modification of the root-vowel which accompanied it has been retained."

Now, I beg the reader to observe that not a word has yet been said to the effect that the said "distinctive ending" has any connection at all with *did*. In the absence of any such clue to the meaning, I think he will admit that "the origin of the distinctive ending of the past tense of weak verbs" was naturally and fairly understood by me to mean "the way in which weak verbs come to have *-ed, -d, or -t* in the past tense." That this should have come about by reduplication, of course appeared "surprising" to me. Further, it needs very little consideration to see that the rest of the paragraph has all the appearance of having been intended to deal with reduplication as connected with strong preterites in general. Surely the suggestion of a misprint, not entirely the fault of the printer (hence part of my criticism), did not require me to go far "out of my way."

However, Canon Daniel ought to know best what he meant. Let us see, however, what his explanation compels him to abide by. The paragraph is reduced, of necessity, to being an account of reduplication as connected with *did*. Respecting this, then, we are told that "the only surviving traces of reduplication in English are *did* and *hight*," and that in modern English the reduplicated syllable has been dropped. How comes it to pass, then, that in both *did* and *hight* it is retained? Really I think the paragraph becomes more surprising than ever.

Now, when it is borne in mind that, if the above quoted paragraph be kept in its present form, we are actually left by Canon Daniel without any explanation whatever of the origin of the formation of the preterite of strong verbs in general, while we have two explanations of the origin of the distinctive ending of weak verbs (for we have all about the origin of the *-d* of weak verbs in the very next paragraph); and when it is observed that meaning and coherence at least are introduced into the above extract, while the desiderated explanation of strong verbs in general is restored, if for "the origin of the distinctive ending of the past tense of weak

verbs" we read "the origin of the distinctive formation of the past tense of strong verbs," I think the reader will agree with me, that Canon Daniel would have done better if he had thanked me for a simple and much-needed correction, instead of charging me with going out of my way to invent materials for an unwarrantable attack.

And now, Sir, I should like to be allowed to answer a question which Canon Daniel puts to me as a "settler," and which, as it involves an important point of scientific grammar, has an interest that lies quite beyond any personal dispute. I had ventured to assert, not (allow me to observe, in correction of Canon Daniel) that there are no such things as mixed verbs, but that "in no English verb was the past tense ever formed by the joint use of both systems of formation (reduplication and auxiliary). The Canon replies—

"What does Mr. Mason make of such past tenses as *wcept*, *crept*, *leapt*, *swept*, *slept*? He will probably say, that the vowel change in these words has been a consequence of the addition to the present tense of the weak ending *-ed*. Unfortunately for this theory, the vowel change occurred before the *-ed* was added. The old past tenses were *wcep* (M. E. *wep*), *creap* (M. E. *crep*), *hleap* (M. E. *lep*), *sweop* (M. E. *sweep*), *slép* (M. E. *slep*). Can there be a shadow of doubt that, as these old past tenses lost their force, through becoming too closely assimilated to the present, the *-t* was added to strengthen them?"

Well, I think there can; and I think the shadow will develop into substance, and the doubt into emphatic denial. The logic of the above-quoted passage is faulty, and its facts are not accurate. The shortening of stem-vowels, through the addition of a suffix, is not disputed or disputable. My "unfortunate theory" would therefore still remain possible, even were the facts precisely as stated. But they are not. The vowel change that we have in the Middle English forms *wép*, *crép*, &c. is not that which we have in *wcept*, *crept*, &c. In the latter the vowel is short, in the former it was long. *Wép*, *slép*, &c. were sounded, not as *wep* and *slep*, but more like *waip* and *slai*p. In Stratmann's Dictionary they are carefully circumflexed. The forms *wcep*, *sleep*, *leep*, &c. are common enough in Chaucer. This fact simply annihilates the objection that was to have crushed my "theory," and Canon Daniel's case falls to the ground. Moreover, it does not seem to have occurred to him that there are numerous examples of verbs, like *dealt*, *knelt*, &c., which never (so far as we can trace them) had strong preterites at all.

But, even were the facts as he puts them, I should still maintain that his theory (a quite unexpected novelty, of which no hint is given in his Grammar) is inadmissible. It is contrary to all the analogies of the language. The general law of the formation of weak preterites is that the suffix is attached to the stem of the verb, as we have it in the present tense or the infinitive mood; and there are plenty of examples to show that when, for whatever reason, a weak preterite was preferred to a strong one, it was based upon the stem of the verb, not upon the old strong preterite form. Such forms as *climbed*, *delved*, *shaved*, *graved*, *shaped*, *heaved*, *baked*, *shined*, *waked*, *waxed*, *laughed*, *sheared*, &c. are based upon the present or infinitive stems in *climb*, *delve*, *shave*, *grave*, *shape*, *heave*, *bake*, *shine*, *wake*, *wax*, *laugh*, *shear*, not upon the old preterites *clomb* or *clamb*, *dalf*, *shove*, *grove*, *shope*, *hove*, *boke* or *boke*, *shone*, *woke*, *wéc*, *lough*, *shore*. The substitution of weak forms for these has nothing whatever to do with any loss of vigour in the old forms, it is simply a case of the conflict of dialectic varieties, which has ended in one of the rival forms obtaining general preference. The quotations in Stratmann and Mätzer will be sufficient to show that for a considerable time they existed side by side. Language is an organic product; its structure is the result of the action of general laws. It is impossible to allow that the weak preterite suffix was at-

tached sometimes to the stem of the verb, as seen in the infinitive, sometimes to a worn-out strong preterite. Even when inflexions get somewhat worn down, the linguistic instinct of a people, even in the case of illiterate persons, still adheres to their primary use. A costermonger may say, "I *knwed* it long ago," but never "I *knewed* it." Topsy, when dealing with the problem of her existence, "spected she *growed*," not *grewed*. A weak preterite *wépte* based upon a (supposed) strong preterite *wép*, is a formation as impossible as the combination *did sang* instead of *did sing*.

Canon Daniel seems to imagine that I attacked his treatment of strong and weak verbs because it ran counter to some special crotchet of my own. I should be only too proud if I could claim as my own the theory with which his is so palpably at variance. It was Koch's admirable grammar which first gave me an insight into this matter; all that I have done has been to try to understand as thoroughly and explain as clearly as possible what is known on the subject. So far as I am aware, I hold no opinion about it which is not supported by the authority of those who, like Koch, Mätzer, Morris, Skeat, Sweet, Murray, &c., are acknowledged on all hands to be in the front rank of modern English scholarship. It is against these authorities that Canon Daniel has to make good his position, and it was because his account of Strong and Weak Verbs, set forth in a work announced as specially intended for "Candidates for the University Local Examinations, for the Matriculation Examination of the London University, and for other public examinations," is at variance with the views which have been long advocated by our recognised authorities, and which (to the best of my belief) are accepted by the whole of that class of English scholars to whom our leading examiners belong, that I thought it right to call attention to the discrepancy.

I am, yours obediently,

C. P. MASON.

P. S.—It may interest some of your readers if I add a remark or two, for the purpose of elucidating some points respecting the formation of past tenses, which, in my first letter, I did no more than barely state.

First, as to the way in which reduplication passed into vowel-change in the strong forms. It is a curious fact that the root-syllable got weakened by the loss of its initial consonant, while the syllable of reduplication held its ground with the loss of its final consonant. In a way analogous to what we see in Greek and Latin, the syllable of reduplication tended to assume a uniform vowel sound. In Gothic this was *ai*, in A. S. *eo*, which often kept its place when the root-syllable underwent change. One of the most striking among the few antique forms which we have to guide us, is *on-dreord*, the old past tense of *on-dredan*. Here we see plainly enough, that *dreo-dred* must have passed into *dreord* (with its second *r*), by the omission of the middle *d* of the word, not by dropping the syllable of reduplication.

It is obvious that the blending of two syllables into one, consequent upon the modification above noticed, must have tended to produce a full and long vowel sound; and this was the actual result both in Latin and Anglo-Saxon. It is clearly wrong, therefore, to attribute the shortening of a long vowel sound to a formation which tends not to shorten vowels, but to lengthen them. The shortening of the vowel sound, in forms like *dealt* or *felt*, is not an essential feature of the weak formation. It is an unintended phonetic corruption, consequent upon the sharpening of the *d* of the suffix into *t*, and was not brought about immediately. *Deilt* was *daelde* in A. S. and Early English. *Wépte*, *slépte*, &c. retained at first the long vowel of the infinitive stems in *wépen* and *slépen*. (See Stratmann). A Scotchman still says *creepit* and *keepit*, where we say *crept* and *kept*. The shortening was a later process, coming long after the tense-formation was completed. Compare forms like *dreamed* and *dreamt*, *kneeled* and *knelt*. The change is precisely the same as what occurs when we give the sounds *breest* and *breth* to what a Scotchman calls *breest* and *breeth*. Some strong preterites got shortened in the same way, as when *heeled* (still used by Chaucer) became *held*.

Contributions.

PHYSICAL EDUCATION.

BY A. H. MORRISON, GALE.

*(Read before the Ontario Teachers' Association at Toronto.)**(Concluded from last month.)*

Subdivisions 3 and 4 of my text treat of out-door exercise, trained exercise, and first as to gymnastics. — Running, jumping, skipping, snow-balling, lacrosse, boating, &c., &c., are all good aids to physical culture. Were all boys and girls constituted alike, and did like athletic tastes prevail the year round these means might prove sufficient wherewith to develop at least a moderately robust physique, and maintain a normal state of healthy being. Unfortunately all boys and girls are not constituted alike. We have the mercurial, all activity and vim; the ordinary, all method and mediocrity in school and out; the studious, all black letter and white paper; the shy, the retiring, the melancholy, the delicate, all nervousness, diffidence, mope and biliousness. Again, sports, even healthy, boy-like and girl-like sports are mutable; the skipping-rope has to be changed for tag, tag is eventually discarded for puss in the corner, which in turn has to succumb to the prowess of something less romping and consequently more sedentary. There comes a time when even the vivacious bright-eyed darling of the cheery ground or the stepple-chase course, is seen suspiciously lurking in shady corners, and stooping with dubious moral intent in dark and uncanny spots, over secret and occult delvings in mother earth. The cabalistic sounds of 'knuckle down', and 'taw', and 'fudge' greet the ear of the tutorial detective on his casual boat through the haunts of the idly-busy young tenants of the play-ground. The open is deserted, every fence has its row of juvenile human wall-flowers, who blossom in groups, in lines, in couples, even in units, all intent on the same fell purpose. No longer do we see twinkling feet speeding across the green sward, leap-frog it dead, base-ball buried, and the whole family of cognate recreative pastime in deepest mourning. Hour in and hour out, the devotee of law stands, sits, kneels, stoops, squats, now shivering, now glowing, now despondent, now jubilant, according as cold or warmth, loss or success acts upon his external frame or inner emotions. It is the marble season, it comes as regularly as the March winds or the measles, the spring bonnets or the summer roses, and while it lasts, good-bye to healthy racing, open shouldered exercise. It is at seasons like this, and more particularly with certain classes of scholars that the need of some compulsory means of hygienic exertion is best appreciated. How many schools are there in the Province of Ontario with even the faintest elements of a gymnasium attached thereto? Even in those which happen to be supplied with bars and poles and similar apparatus, how many scholars avail themselves of the opportunity afforded of using them in a systematic manner? How many among their preceptors are competent to give instructions in the simplest athletic movement, or to supervise an elementary gymnastic course? It may be answered the preceptors are not engaged to instruct in physical athletics, the athletics of the brain are all they are required to supervise and direct. So much the worse for instructor and instructed. But with regard to the apparatus, could not a few bars and poles be erected and ropes suspended without entailing ruinous expense on the ratepayers in every school-yard in the Province? Could not a few simple yet healthy movements be taught to the scholars without necessitating a very deep insight into the laws of athletics? No matter how humble the apparatus, no matter how elementary the instructions, could not every pupil, boy and girl, be compelled, as a matter of

duty, where such apparatus is provided, to perform occasional exercise during certain days of the week?

Upon one most vital topic in connection with gymnastics, I would like here briefly to touch. I allude to the art of swimming, or at least, to the method of preserving life while in a state of immersion, voluntary or involuntary. The blindness of humanity in some respects has become proverbial, it is amazing and utterly incomprehensible. Our nationality is threatened by exterior and inimical influences—the voice of warning goes forth, and tens of thousands of bristling bayonets line our desiant shores to resist the aggressor. A disastrous explosion occurs in a coal mine through the destructive agency of fire damp, and a Humphrey Davy at once sets his scientific genius to work to construct an instrument whose use shall tend to avert such calamities for the future. A stately man-of-war with her noble crew founders some murky night in the tempestuous waters which lash a rock-bound coast, and the inventive wits of ship-builders, engineers and philanthropists are at once enlisted on the side of humanity—with what results? Water-tight compartments, magnificent lighthouses, life-boats, floating beacons—Life-saving apparatus of every kind and degree is multiplied. News of a terrific railway accident is telegraphed through the length and breadth of a startled continent, and measures are at once adopted to moderate undue speed, check negligence of officials, repair roadways, perfect signal codes, compens to sufferers. A pleasure boat, out under a sunny sky, floating on an unruffled plane of azure, freighted with thoughtless, happy, riceless human souls, capsizes through inadvertency, neglect or over-crowding, and those souls are hustled into eternity. A sigh of horror is wafted to the ears of the shuddering public, which lingers for a brief instant and then dies away ere the ripples have well closed above the spot from which the poor human forms, bereft of life, have been lifted for the last time to the light of heaven; and what measures are taken to prevent a repetition of this most awful catastrophe? None—none that are truly effectual. Laws may become for a season stricter, vessels examined a little more closely, avaricious owners of unworthy craft forbidden under the minacious terrors of a possible penalty, thus to admit humanity by the gross into the most awful arcana of the invisible world at such a ridiculously small figure as 25 or 50 cents, or perhaps a dollar a head. Think of it—the beginning, a cheap holiday excursion; the ending—200 open graves and alas! for cheapness—the funeral expenses, and then the waste of tears and life energy and heart action;

"Sudden partings such as press
The life from out young hearts and choking sighs,
Which no'er might be repeated."

Repeated!—What decisive and effectual step is ever taken to baffle the destroyers' death and greed, and rob them of their victims. Another bright day; another tempting way bill; another holiday crowd. Hoary age and russet prime, golden youth and rosy childhood step on board all flutter and excitement and high hope. How many as individuals able, if occasion requires, to strike out a limb to save themselves if suddenly immersed in the treacherous element which now woos them with its placid smile? How many, so inured to the contact of the water that mere presence of mind will suffice, not only to prompt exertions for self-preservation, but will prove efficacious to withhold the deadly clutch which drags down a fellow being to his death, who, unencumbered, had been able to save himself and perhaps others? It is time and high time that something were done in this matter. Why, a dog if thrown into a pond will paddle to the shore, and is a rational being less able to preserve his invaluable life than a dog? London disasters with their manifold editions are becoming too notoriously frequent, and I repeat something should be done to compel humanity, especially young humanity, so to train itself that under exceptional circumstances, and in a foreign element, it may not hopelessly founder like a water-logged hulk within sight of the glancing sun-

light and the hills which possibly circle the home where loving hearts are anxiously awaiting the return of—what?

There is but one way to avert these terrible visitations. All the boat building and examining is futile. The remedy must be with individual self. Life-preservers cannot be forever round the necks of pleasure seekers; these must carry with them at all times, prompt on all emergencies, a trained and ready self-possession and a physique, so educated that if need be, it may, if only like the brute, be led instinctively to make an effort for the salvation of its animating spark of life, and not sink like a stone beneath the eddying waters of a despairing death.

To my next and last subdivision, No. 4, which treats of drill, I would also direct special attention, both because drill can be efficiently taught without other apparatus than the natural mechanical belongings of the human body, to wit, legs and arms, and need not necessitate a very recondite knowledge of abstruse professional technicalities. Drill is of all agents for outdoor physical instruction, the one *par excellence*, for any school of any nationality, in any climate. If there is a means of building up a man's physique more than another it is drill. If there is an artist more competent than another to put the finishing touches to that sentient statue of clay, which, rough moulded, has been handed in for completion and polish, it is the qualified drill instructor. What says La Rochefoucauld, that shrewd, calculating intellect, and master of human nature, in No. 393 of his celebrated maxims, "*La vie militaire se perd quelquefois dans l'armée, mais il ne se perd jamais à la cour,*" and how is this *coelacy*, or if I may be allowed the enallage *slang* air lost; why by the manly, independent, morally elevating nature of the discipline which is received through the agency of this same drill instructor. In his hands, the veriest clod, the most plodding plod of the plodding sons of the ploddingest population that inhabits this round earth, the English rustic, and I their countryman say it, may be, and is frequently transformed under that magic wand the military pace-stick, to something in the shape of a human biped. Hodge, the ploughman, though he shamble like *ursa major*, or shuffle like a seal with the elephantiasis, may be taught to stand erect, be led by the loving voice and gentle hand of martial authority—supplemented, if need be, by the salutary dread of a *ble-a-tele* with an offended and avenging adjutant—to contemplate loftier objects than the toes of his high-lows. The magnetic affinity which is oft times observed to exist between his fraternally inclined knee joints may be overcome by the force of moral regimental suasion, and the clod-pole, who, upon his first appearance on the parade ground in all the panoply of warlike vestments, might not unaptly have been taken for a human embodiment of the old time fable reversed, viz: a sheep in wolf's clothing trussed for the slaughter, not of national enemies but of himself, turns out in very fact—after a reasonable interval of judicious discipline to have been intended for a man and a brother; supreme and culminating effect of modern military evolution, the Darwin of the drill ground has reclaimed and classified the wild man of the turnip fields.

In the military schools of the British army, at least while on foreign service, half an hour, usually the last half hour of the school-day, is, or used to be, set apart for physical exercise, under the systematic directions of the school master and his assistants, a plan, I think, which might be followed with advantage in schools which are non-military. I see no reason why boys and girls of all ages should not be drilled. Drill might be made a part of the regular school curriculum, half an hour daily, or say three times a week in fine weather, might be set apart for this exercise. It is not, be it observed, a difficult task to master the rudiments of military movements, it is far from being an unpleasant one. Healthy, manly, captivating, there is no bodily exercise, which so trains the limbs and muscles, no species of physical discipline with which is connected so salutary a morale. It is the stepping stone to military renown, the germ of national independence and self-existence, the fountain head of its prestige, and has been ere this the foundation on which has been raised the glorious structure of civil and religious liberty. "The British soldier has the swing of conquest" remarked General Grant with admiring emphasis. He has, as I before observed, the swing of the parade ground, which trained him to conquest. Without hesitation, I affirm that many of our greatest victories have been the result of an incomparable system of army discipline, many of our reverses directly traceable to a lack or relaxation of it. I do not intend to enter into any very lengthy argument here as to the advisability of this or that method of drill; any method is good. I would merely lay down, as a broad and fundamental principle, that drill including extension motions, marching, simple evolutions, &c., might be introduced into our

public school system; it might be conducted under the supervision of the ordinary teacher, during a part of the ordinary school day. With the assistance of a good book, such as for instance the little manual compiled by Mr. Hughes, Inspector of Public Schools for the city of Toronto, any individual of ordinary capacity and with a will, might soon render himself competent to instruct a class of boys or girls, or both. And the results, I conscientiously believe, would soon be evident in a firmer tread, a more erect and open carriage, a bolder front, a healthier physique. Such absurd remarks as "He walks as if he owns the whole world" would cease, or at least would cease to bear an insidious meaning and all appearance of a desirability to become sole proprietor of the nether-most portion of this material universe would vanish too. It may be asked how shall we find time for this innovation? We have already a full programme. Admittedly so, by far too full. So full that the fragile craft of elementary instruction, is already settling under the freightage. Oust, I unhesitatingly say, one of our half-hour subjects. Renounce for thirty minutes *per diem* whitewashed walls and philosophic speculations and devote them to the light of heaven and physical development, throw *ologies* and *onoms* to the winds, let the laws of natural philosophy at this stage give place to the laws of natural healthy action and growth. We have too much cram or too little digestion, our entrées are too numerous, but where is the *pièce de résistance*? Are stultified intellects and unhealthy frames any compensations for a smattering knowledge of geometric deduction, or a bowing acquaintanceship with the signs of the zodiac? Subject is crowded upon subject, algebra follows arithmetic, geometry runs a muck with algebra, mensuration handicaps geometry, and so on, *ad infinitum*, till bewildered childhood wonders with the English charity boy, who it appears found some difficulty with the alphabet, whether it is worthwhile going through so much to gain so little. Give our pupils a taste for sensible reading, a taste for virtuous enjoyments, a taste for physical culture, and we may not indeed have manufactured a perfect humanity in embryo, but we shall at least have put a good many of our fellow mortals on the right track to become enlightened, healthy, and happy members of society. Do not misapprehend me, I do not undervalue mathematics; far from it, but for childhood I value language more. Is it not a pity to see a young man, or young woman able to solve an equation and unable to speak grammatically, to read fluently, or to compose correctly? I, like Oliver Wendell Holmes, have an immense respect for a man of talents, *plus* the mathematics. Shakespeare and Milton are great, but honor be to Newton and to Herschel. I speak only according to my convictions when I say that to language should be accorded the first place in primary education, and in an elementary school there are many things of more value to the ordinary scholar than mere mathematical formulae, for why? The average pupil must talk and read to the end of time, but how many require Euclid or algebra in after life? There is an eternal fitness of things, and in a country like Canada to stuff an ordinary girl's head with mathematics when she cannot by any written or unwritten formulae, whatsoever make her own garments; or initiate her into the mysteries of the corn laws, when she cannot so much as bake a loaf of bread, is I deem an eternal unfitness, 'tis "wasteful and ridiculous excess" indeed. Teach her how to stand, to sit, and to walk like a rational human being with an immortal soul, to talk without murdering the Queen's English or vilifying her next door neighbour; to read fluently and intelligently our best English Classics, to total up correctly an ordinary market account, to demean herself gracefully and modestly before all men, to fit herself for the highest duties of life which the Almighty has designed erring humanity to perform as loving daughter, as tender sister, as devoted wife, as "ministering angel," woman! We shall have better maidens, better matrons, and if need be better heroines. I am aware that I am treading on dangerous ground. There is at present a strong advocacy for higher female education, I say nothing against it, for a certain class. Let those who can afford time and money—the latter always an essential be it borne in mind—obtain the highest education that money can procure or time admit of, and God prosper them. I advocate the cause of those who can never reach a high education, whose paths lie apart from the din of the great world. I speak not on behalf of the favored few, but of the lowly many who will not, cannot hope to attain to anything beyond a Public School education. We, the educators of such have a sacred duty to perform. The many and the lowly are our clients, and how shall we, their advocates, account to our consciences in the silence and the gathering gloom of the twilight, if under the noon-day sun we neglect our noblest, our holiest trust, and apathetically or ignobly refuse to lift up our voice in earnest, heart-felt pleadings on their behalf.

Examination Questions.

JULY EXAMINATIONS, 1881.

FIRST CLASS TEACHERS.—GRADE C.

(Continued from last month.)

GEOGRAPHY.

TIME—TWO HOURS.

Examiner—S. ARTHUR MARLING, M.A.

- 1 Sketch an outline map of the Mediterranean Sea, marking the countries and chief cities upon its shores, and the principal rivers which flow into it.
- 2 Write explanatory notes on the following points connected with the Mediterranean Sea :
 - a. Its temperature and saltness as compared with the Atlantic.
 - b. The continuous flow of water into it from the Atlantic.
 - c. Its influence on civilization.
- 3 Name and describe the physical features of the Spanish Peninsula.
- 4 Enumerate the British possessions in India and Australasia ; state the form of government, chief cities and productions of each.
- 5 Trace the Mississippi, Rhine and Elbe, from source to mouth, naming the chief towns on their banks.
- 6 Describe the position of Avignon, Varna, Belgrade, Lutzen, Sadown, Granada, Antwerp, Leipsic, Rhodes ; and mention any historical events connected with them.
- 7 Name the principal rivers of Ontario, and the counties and towns through which they pass.

ENGLISH GRAMMAR.

TIME—THREE HOURS.

Examiner—J. M. BUCHAN, M.A.

1. Cor. Shall remain !—
Hear you this Triton of the minnows? mark you
His absolute shall ?
Com. 'Twas from the cannon.
Cor. Shall !
- O good, but most unwise patricians, why,
You grave, but reckless, senators, have you thus
Given Hydra here to choose an officer,
That with his peremptory shall, being but
The horn and noise o' the monsters, wants not spirit
To say he'll turn your current in a ditch,
And make your channel his? If he have power,
Then veil your ignorance: if none, awake
Your dangerous lenity. If you are learned,
Be not as common fools; if you are not,
Let them have cushions by you. You are plebeians.
If they be senators; and they are no less,
When, both your voices blended, the greatest taste
Most palates theirs. They choose their magistrate:
And such a one as he, who puts his shall,
His popular shall, against a graver bench
Than ever frown'd in Greece! By Jove himself,
It makes the consuls base! and my soul aches
To know, when two authorities are up,
Neither supreme, how soon confusion
May enter 'twixt the gap of both, and take
The one by the other. —*Coriolanus, Act iii. Scene 1.*
- (i.) Parse *Hydra here to choose*, l. 8; *with, being but*, l. 9; *horn*, l. 10; *to say*, l. 11; *channel his*, l. 12; *voices, taste*, l. 18; *theirs*, l. 19; *By*, l. 22; *It*, l. 23; *To know*, l. 24; *Neither*, l. 25.
 - (ii.) Analyze fully from "They choose their magistrate," l. 19, to Greece, l. 22.
 - (iii.) Explain the force of *with*, l. 9.
 - (iv.) *He'll turn your current in a ditch, And make your channel his*, ll. 11 and 12. Between whom is a comparison made in these words?
 - (v.) Scan ll. 7 and 10.
 - (vi.) Derive *absolute, officer, spirit, current, power, neither, betwixt, other, then, than, when, such*.

2. Distinguish, according to Mason, between verbs of complete, and verbs of incomplete predication. Criticise his views on this subject.

3. Give a full account of the function of words ending in *er*.

4. Distinguish the different sounds represented by the letter *e* in the English language, exemplifying each by giving at least three words in which it occurs.

5. Correct the following selections:—

"Some teach the alphabet at the first before teaching the pupils to read. By doing this it makes the pupil dull as it will take considerable in teaching them representatives of something they know nothing of, whereas if the word is taken as a whole being a representative of something that pupils are familiar with for instance if the pupil is told that OX stands for ox, they will quite easily remember this for they are quite familiar with the animal called "ox" and this is represented by the word "ox."

"When the child starts first to read he ought not to be taught that OX is *ox* because the letters OX spell *ox* and will learn the spelling accidentally with the reading; but he ought to have a picture of an ox shown him and then told that the word 'ox' is *ox*, he will remember this like he does the picture, because it is but a picture of a word."

"This method I consider a very poor one as a child knows a great many words before it comes to school and wants to be taught the formation of these word, that is going so far from the known to the unknown and then breaking up of the word into its parts is again a second step from the known to the unknown, while the method stated is beginning with an unknown leading them in the dark to, perhaps, a known, or perhaps an unknown.

6. "In this point charge him home, that he effects
Tyrannical power. If he evade us there,
Enforce him with his envy to the people
And that the spoil got from the Antiates,
Was ne'er distributed."

(i.) Analyze fully.

(ii.) Parse 'home.'

7. Accentuate *exorcist, clematis*.

COMPOSITION.

TIME—ONE HOUR.

Examiner.—JOHN WATSON, M.A., LL.D.

Give the sense of either of these passages in your own words, using the simplest English you can find, and giving the preference to short sentences:—

(1) "Reader, the Ages differ greatly, even infinitely, from one another. Considerable tracts of Ages there have been, by far the majority indeed, wherein the men, unfortunate mortals, were a set of mimetic creatures rather than men; without heart-insight as to this Universe, and its Heights and Abysses; without the conviction or belief of their own regarding it at all; who walked merely by hearsays, traditionary cants, black and white surplices, and inane confusions;—whose whole Existence accordingly was a grievance; nothing *original* in it, nothing genuine or sincere but this only, Their greediness of appetite and their faculty of digestion. Such unhappy Ages, too numerous here below, the Genius of Mankind indignantly seizes, as disgraceful to the Family, and with Rhadamanthine ruthlessness—annihilates; tumbles large masses of them swiftly into Eternal Night. These are the unheroic Ages; which cannot serve on the general field of Existence, except as *dust*, as inorganic manure. The memory of such Ages fades away for ever out of the minds of all men. Why should any memory of *them* continue? The fashion of them has passed away; and as for genuine substance, they never had any. To no heart of a man any more can these Ages become lovely. What melodious living heart will search into *their* records, will sing of them, or celebrate them? Even torpid Dryasdust is forced to give over at last, all creatures declining to hear him on that subject; whereupon ensues composure and silence, and Oblivion has her own."—*Carlyle's Cromwell, Introduction, chap. V., p. 71.*

(2) Upon the whole, men do not hitherto appear to be happily inclined and fitted for the sciences, either by their own industry, or the authority of others, especially as there is little dependence to be had upon the common demonstrations and experiments; whilst the structure of the universe renders it a labyrinth to the understanding; where the paths are not only everywhere doubtful, but the appearance of things and their signs deceitful; and the wreaths and knots of nature intricately turned and twisted; through all which we are only to be conducted by the uncertain light of the senses, that some-

times shines, and sometimes hides its head, and by collections of experiments and particular facts, in which no guide can be trusted as wanting direction themselves, and adding to the errors of the rest. In this melancholy state of things, one might be apt to despair both of the understanding left to itself, and all fortuitous helps; as of a state irremediable by the utmost efforts of the human genius, or the often-repeated chance of trial. The only clue and method is to begin all anew, and direct our steps in a certain order, from the very first perceptions of the senses. Yet I must not be understood to say that nothing has been done in former ages, for the ancients have shown themselves worthy of admiration in everything which concerned either wit or abstract reflection; but, as in former ages, when men at sea, directing their course solely by the observation of the stars, might coast along the shore of the continent, but could not trust themselves to the wide ocean, or discover new worlds, until the use of the compass was known: even so the present discoveries referring to matters immediately under the jurisdiction of the senses, are such as might easily result from inexperience and discussion; but before we can enter the remote and hidden parts of nature, it is requisite that a better and more perfect application of the human mind should be introduced. This, however, is not to be understood as if nothing had been effected by the immense labours of so many passed ages; as the ancients have performed surprisingly in subjects that require abstract meditation, and force of genius. But as navigation was imperfect before the use of the compass so will many secrets of nature and art remain undiscovered without a more perfect knowledge of the understanding, its uses, and ways of working. *Bacon's Great Instauration, Preface.*

FIRST GLASS TEACHERS—GRADES A AND B.

ALGEBRA.

TIME—TWO HOURS AND A HALF.
Examiner—ALFRED BAKER, M.A.

1. If $f(x)$ be divided by $x-a$, and the integral quotient by $x-b$, and the second quotient by $x-c$, the remainder will be

$$\frac{(b-c)f(a) + (c-a)f(b) - (a-b)f(c)}{(b-c)(c-a)(a-b)}$$

Give the general theorem in the case of any number of divisors.

2. There are two sets of articles, each containing n articles, all different. Combinations are formed by taking none out of the first and any r out of the second, any one out of the first with any $r-1$ out of the second, any two out of the first with any $r-2$ out of the second, &c., any r out of the first with none out of the second. Obtain an expression for the total number of combinations so formed.

3. Solve the cubic equation $x^3 - px + q = 0$, writing down all the roots.

4. If a, b, c be the roots of $x^3 - px^2 + qx - r = 0$, form the equation whose roots are

$$\frac{1}{a} \left(\frac{1}{b} + \frac{1}{c} \right), \frac{1}{b} \left(\frac{1}{c} + \frac{1}{a} \right), \frac{1}{c} \left(\frac{1}{a} + \frac{1}{b} \right).$$

Also that whose roots are $\frac{ab}{a+b}, \frac{bc}{b+c}, \frac{ca}{c+a}$.

5. (1) Find the general solution in positive integers of $7x - 8y = 13$.

(2) What is the least sum of money less than £2 10s. that can be paid in the greatest number of ways in half-crowns and shillings, these conditions being exacted in the order—1st, that the number of solutions shall be as great as possible; 2nd, that the sum of money shall be as small as possible, zero solutions being counted?

6. If $\frac{x^2 - 2x}{(x-1)^2(x-2)}$ be expanded in ascending powers of x , what is the coefficient of x^n , and the sum of the first n terms.

Find the greatest value of x with which the expansion will be arithmetically true.

7. Sum to n terms the series

$$(1) 1.2 + 2.3 + 3.4 + \dots$$

$$(2) \frac{1}{1.3.5} + \frac{1}{3.5.7} + \frac{1}{5.7.9} + \dots$$

8. The arithmetic mean of any number of positive quantities is greater than the geometric mean.

Show that $\frac{1}{2}n + 1(n+2) > \{(n+1)(n)^{\frac{1}{2}}\}$.

9. Examine the convergency or divergency of the series

$$1 + \frac{1}{1^2} + \frac{1}{2^2} + \frac{1}{3^2} + \dots$$

$$(2) \frac{1}{1^2+1} + \frac{2}{2^2+1} + \frac{3}{3^2+1} + \dots$$

10. (1). Every convergent is nearer to the continued fraction than any of the preceding convergents.

(2). Express the development of $(1+x)^n$ as a continued fraction.

TRIGONOMETRY.

TIME TWO HOURS AND A HALF.
Examiner ALFRED BAKER, M.A.

1. Prove that

$$\log_b a \cdot \log_c b \cdot \log_d c \dots \log_a m = 1;$$

also $\log_b N = \frac{\log_a N}{\log_a b}$.

What use is made of the latter?

2. Show that whatever be the magnitude of θ , $\sin(-\theta) = -\sin\theta$, and $\cos(90^\circ - \theta) = \sin\theta$.

3. Explain the circular measurement of angles.

Show that limit, $\theta \rightarrow 0$, of $\frac{\sin \theta}{\theta}$ is 1. What is the limit if θ be expressed in minutes?

4. Find a general expression for all angles the sides of which have the same given value.

Find the general value of θ in the equations

$$(1) \sin 5\theta + \sin \theta = 0.$$

$$(2) 2 \sin 3\theta + \cos 2\theta = 1.$$

5. From a figure find $\tan(A+B)$ in terms of $\tan A$ and $\tan B$. Deduce $\sin(A+B), \cos(A+B)$.

6. (1). In any triangle shew that $\tan A + \tan B + \tan C = \tan A \tan B \tan C$.

(2). If A, B, C be the angles subtended at the centre of the inscribed circle of a triangle by its sides a, b, c , then

$$\cot \frac{A}{2} + \cot \frac{B}{2} + \cot \frac{C}{2} + \tan A \tan B \tan C = 0.$$

7. Given the angles of a triangle and the sum of the sides, shew that for the solution of a triangle we have the formulas

$$a = \frac{(a+b+c) \sin \frac{A}{2}}{4 \cos \frac{B}{2} \cos \frac{C}{2}}, \text{ \&c.}$$

8. If AD, BE be drawn bisecting the angles at A and B of a triangle ABC , and meeting the opposite sides in D and E , then r_1, r_2 being the radii of circles inscribed in the triangles ABD, ABE

$$\frac{1}{r_2} - \frac{1}{r_1} = \frac{1}{S} \left\{ a \cos \frac{A}{2} - b \cos \frac{A}{2} \right\},$$

S being the area of ABC .

9. Show that the height of an inaccessible object C , vertically above O , is determined by finding its angle of elevation at A , its angle of elevation at B (AB being perpendicular to AO), and by measuring the distance AB , the points A, B, O being in a horizontal plane; and give an expression for the height OC in terms of the quantities so determined.

10. Assuming De Moivre's Theorem in the case of a positive integer, establish it when the index is negative and fractional.

Utilize the theorem to find the values of x which satisfy the equation $x^n + 1 = 0$.

PROBLEMS.

TIME—THREE HOURS.

Examiners—ALFRED BAKER, M.A.
J. C. GLASHAN,

1. O is the centre of a circle, and Q another point in the diameter which meets the circle in A . B is any point on the circle, and C a point between O, Q , such that $\sin QBO : \sin CBQ = p$, a constant; also $AQ = AO(p-1)$. Show that as B assumes different positions on the circle, the position of C is unchanged.

2. Show how to draw through two given points on the circumference of a circle, two parallel chords such that the rectangle under the chords shall be (when possible) of given magnitude.

3. The square is greater than any rectangle inscribed in the same circle.

4. Four equal spheres of radius a are just contained in another

sphere, their centres forming a square; find the radius of the containing sphere.

5. Show that

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

$$(2). 1 + \frac{2}{9} + \frac{2.8}{9.18} + \frac{2.8.14}{9.18.27} + \dots \text{ ad inf.} = \sqrt[3]{3}.$$

6. *A* and *B* are two rough pegs. A uniform rod *CD*, whose centre of gravity is *G*, passes over *A* and under *B*, and is just kept from sliding by the friction between the pegs and rod. If μ be the coefficient of friction, and α the inclination of *AB* to the horizontal, express the ratio of *GA* to *GB*.

7. *P* is any point on an ellipse whose centre is *O*, and through *A*, the extremity of the axis major, a line *AMN* is drawn parallel to *OP*, cutting the curve in *M* and the axis minor in *N*; shew that $OP^2 = \frac{1}{2}AM \cdot AN$.

8. The area of the parallelogram formed by the tangents at the ends of any pair of diameters of a central conic varies inversely as the area of the parallelogram formed by joining the points of contact.

9. The bisectors of the angles between the lines $ax^2 + by^2 + cxy = 0$, are $c(x^2 - y^2) - 2(a-b)xy = 0$, the axes being rectangular.

10. The circles obtained by varying *k* only in the equation $x^2 + y^2 + k(ax + by) - (a^2 + b^2)c(k+c) = 0$, all touch each other at the same point.

11. Divide an inclined plane into *n* parts, such that the time of descent down each of a particle starting from rest at the top may be equal.

12. When a projectile is moving in *vacuo*, if the velocity, when at the highest point, be changed so that it bears to the old velocity the ratio $\tan \alpha$, 1, where α is the angle of projection, the focus of the new path will be in the horizontal plane through the point of projection.

13. A heavy elastic particle slides down a smooth inclined plane of given length and height, and on reaching the bottom rebounds from a hard horizontal plane. If the length of the plane be constant, determine its height that the range of the particle on the horizontal plane may be the greatest possible.

Selections.

THE NEW EDUCATION.

BY PROFESSOR MEIKLEJOHN, ST. ANDREWS, SCOTLAND.

I.

Mr. James Boswell was in the habit of starting intellectual game for his great guide, philosopher, and friend—Dr. Johnson—to run down: of asking all kinds of questions on things in heaven and things on earth; of proposing all kinds of problems, both possible and impossible. Perhaps one of the most remarkable questions he ever started—one of the most difficult problems he ever proposed—was one which relates to the bringing up of a new-born baby. Boswell, a man not without insight, and with a firm belief in the far-seeingness of his oracle, gives us the following:—"I know not how so whimsical a thought came into my mind, but I asked, 'If, Sir, you were shut up in a castle, and a new-born child with you, what would you do?' Johnson: 'Why, Sir, I should not much like my company.' Boswell: 'But would you take the trouble of rearing it?' He seemed, as may well be supposed, unwilling to pursue the subject; but, upon my persevering in my question, replied, 'Why, yes, Sir, I would; but I must have all conveniences. If I had no garden, I would make a shed on the roof, and take it there for fresh air. I should feed it, and wash it much, and with warm water to please it—not with cold water to give it pain.' Boswell: 'But, Sir, does not heat relax?' Johnson: 'Sir, you are not to imagine the water is to be very hot. I would not cuddle the child. No, Sir, the hardy method of treating children does no good, I'll take you five children from London who shall cuff five Highland children.

Sir, a man bred in London will carry a burden, or run, or wrestle, as well as a man brought up in the hardiest manner in the country.' Boswell: 'Good living, I suppose, makes the Londoners strong.' Johnson: 'Why, Sir, I don't know that it does. Our charmen from Ireland, who are as strong men as any, have been brought up upon potatoes. Quantity makes up for quality,' Boswell: 'Would you teach this child that I have furnished you with anything?' Johnson: 'No, I should not be apt to teach it.' Boswell: 'Would you not have a pleasure in teaching it?' Johnson: 'No, Sir, I would not have a pleasure in teaching it.' Boswell: 'Have you not a pleasure in teaching men?' 'There, I have you. You have the same pleasure in teaching men that I should have in teaching children.' Johnson: 'Why, something about that.'"

Now, the difficulty in which Dr. Johnson found himself, is the standing difficulty of the English nation. In spite of all that has been spoken and written about it, we do not yet know how to educate young children; and the problem increases in difficulty as we go backwards towards the beginning of life. How to train a child to healthy activity, to self-help, to a harmonious development of its powers of body and mind—is still a problem which waits for solution. A solution—or even the materials for a solution—we shall welcome from anywhere. An attempt at a solution comes to us from Germany; it has made many disciples and warm adherents in Germany, England, France, and the United States; and has been so much of a revelation to many of its disciples that they have given to it the name or the *NEW EDUCATION*. Englishmen need not find fault with the term *new*. Civilization has had to fight for thousands of years for its very existence. It had to learn the arts of agriculture, of war, of law, and of medicine before it could give some of its hard-earned leisure to the work of training up its young children. It is only from 1870 that the work of instruction has begun to take a national shape. Besides, many of the very oldest things England has are called *new*. There is the oldest forest in the country—the *New Forest*; there is *New College*—one of the oldest colleges in Oxford; and the oldest fifty streets in London are called *New Street*. The point about our education is not as to whether it may or may not rightly be called *new*, but as to the solidity of its foundation. Does it dig down deep enough in human nature, and is it based on the solid rock of eternal truth?

Froebel, a thoughtful and slow-meditating German, is the founder of this new education. Let us see how he faced the problem, and how he tried to find an answer for it. He saw the child come into life. When he begins to be able to run about, not much attention is paid to him, and he is left pretty much to himself. He gets into what is called mischief; and then he is checked. He is hardly guided into the right way at all, and, as dirt is only matter in the wrong place, so his mischief is only activity invested in the wrong objects. If he is the child of rich parents, he is overwhelmed with cartloads of toys; and the only activity which they call forth, or can call forth, in him, is the activity of breaking them up as rapidly as possible. Then he wants more, and he gets them. Thus there is implanted in his mind a desire for immediate pleasure, which must be gratified at any cost; but no true power of his own has been called into pleasurable activity. If he is the child of poor parents, he is much more fortunate, for then he is very soon set to work to do something, and he finds himself a useful and important member of the body corporate called the family. If he lives in the country he forms an acquaintance with trees and plants, with birds and beasts, and his eyes and soul have some chance of opening. But there are no natural joinings on to his school-life, which is soon to come; his days are joined each to each by the "natural impiety" of association with—it may be the rougher—among his school-fellows; his school-days are an artificial intercalation between his infancy and

his manhood; and no one can say that the best has been done for him, or has been made of him. His parents do not know what is going on in his mind; and, for all they can tell, he may turn out well, or he may turn out very ill. Now, Froebel asked himself the question, "What are the living powers what are the germ-points which exist in the minds of children, and how can I provide for them a soil and a sunshine which shall give them opportunities of kindly growth?"

"There is external nature, and the infinite varieties of life, form, colour, motion, change and growth. There is human society a higher kind of nature, but still a nature with its various kinds of pleasures and pursuits, some healthy and beneficial, others deadly and pernicious. How shall I so train him—first to action, then to knowledge, and then to religion that he shall eagerly and joyfully seize the good, and shun what is hurtful to the growth of his soul and body?"

Froebel spent his life in feeling and groping after answers to these questions. He did not rashly take up with some clever *fad*—with some ingenious nostrum—and then sing the praises of that as the help and cure for all the ills in our world of education. "Empiric physicians," says Lord Bacon, "commonly have a few pleasing receipts, whereupon they are confident and adventurous, but they know neither the causes of the diseases, nor the constituents of patients, nor the true method of cures. But Froebel was determined to know the causes of things, to understand the nature of children, and to find out what remedies could be found for the great deficiencies in early education.

To understand what the nature of his own experience was, let us take a glance at his life and the nature of his own education.

(To be continued.)

LANGUAGE TEACHING.

BY J. B. MCHESNEY, PRINCIPAL, OAKLAND HIGH SCHOOL.

There is no branch of study pursued in our schools in which there is a greater discrepancy between the labor performed by both teachers and pupils, and the results obtained than there is in English Grammar. Insufficient and unsatisfactory results are probably approximated more nearly in reading than in any other study, but, taking everything into consideration, the toil and worry of years over abstract terms, unmeaning definitions, and unintelligible rules of syntax connected with the study of grammar, find no counterpart in the whole range of school-room work. The evidences of the truth of this statement are so numerous, and they thrust themselves so obtrusively upon us from all sides, that every person who has taken pains to investigate the subject must be convinced of its accuracy. Why is this? Other branches of study are pursued satisfactorily and why should not English Grammar be? There can be no reason why it should stand as an exception.

The child studies arithmetic, and each day shows an advance. Slowly but surely the different topics are taken up and mastered, so that, after a given time, a fair examination will show that what has been carefully studied has been successfully acquired. From a condition of ignorance of the simplest arithmetical operations, the pupil has systematically passed over and mastered the successive steps of the science until he can perform readily the ordinary operations which occur in business transactions. In short there has been a change from ignorance to knowledge, the object for which the pupil laboured has been secured. It is the same with the study of geography. The object of the pupil is to become acquainted with the more prominent natural divisions of land and water, the location of important cities and countries, the activities of the various

nations that inhabit the globe, and, in brief, the leading facts which combined, constitute geography. Gradually as months pass by this subject is attained, varying in extent with the skill of the teacher and the aptitude of the learner; at any rate there is a marked advance from complete ignorance of all geographical knowledge to intelligence of the same. In like manner I might mention history, physiology, or any branch of study introduced into the curriculum of our schools except English grammar. Unfortunately, this study, which all will readily admit as being of equal, if not of superior importance, does not meet with the same success. The schoolboy studies arithmetic, and in time is able to calculate interest, make out bills, and solve problems of considerable intricacy; he studies history and is able to give a synopsis of the American War, the causes which led to the War of Independence, or account in an intelligent manner for the rise and progress of the arts and sciences in our country, thus showing that he has accomplished what he set out to do: he studies English grammar and what is the result? Can he speak the language with greater accuracy or write it with more facility by reason of this study than he could before he commenced it? I think the answer to this question will be almost unanimously in the negative by experienced teachers. But the object of the study is given at the commencement of all the textbooks on the subject, and the pupil is required to commit it to memory in substantially the following words: "English grammar teaches how to speak and write the English language correctly."

Experience has proven that these results are not obtained, hence the conclusion necessarily follows that there is a radical defect somewhere. Every teacher who honors his profession should endeavour to discover where this defect lies, and having found it apply the proper remedy.

The wonder is that in this age of boasted intelligence, when such rapid strides have been made in the various arts and sciences, when some of the most learned and philosophical minds of the age have been devoted to the preparation of books for the education of the young, that a subject of so vital importance as the correct and ready use of our mother tongue, should have received so little attention, or that the thought and labour given to it should have been so barren of results. Is it because the idea has prevailed that every child must learn to talk whether he will or no, if not with absolute precision, still with sufficient accuracy to meet the demands of ordinary social and business life, and that writing is a gift, and if one is not "to the manner born" it is perfectly useless to ever endeavour to do more than write a social or business letter?

However it is not my purpose at the present time to account for the existence of this state of affairs, but simply to call attention to the lamentable fact and if possible suggest a remedy. It would seem that the same success should attend this branch of school work that does any other, provided as sensible means be made use of to secure it. If a teacher wishes a class of pupils to operate correctly in the fundamental rules of arithmetic, he requires them to perform hundreds of examples. They must repeat operations over and over again for months, and even years, before they can be sure of entire accuracy.

What would be thought of a teacher who attempted to teach penmanship by insisting upon the memorizing of rules pertaining to the correct formation of elements and principles, with an exercise in writing once a month, or possible once a fortnight? Or how long would it take a young man to learn the carpenter's trade, if his master should require him to occupy his time in committing to memory the names of the different tools or the directions for guiding the saw or plane? Imagine the ridiculous farce of a person spending a year or two in memorizing the names of the various appliances used by any mechanic, together with directions for their use, and then after

he has passed a careful examination on it all, pronounce him a skilled workman ! How absurd ! you say, but virtually this process has been in operation for years, and is still practised throughout the length and breadth of our land in teaching the art of using the English language.

There is a science of penmanship, but it does not follow that if a person has a complete knowledge of it he is skilled in the art of writing ; also there is a science of carpentry, but its knowledge does not carry with it skill in handling tools ; similarly there is a science of language, and because a person is thoroughly familiar with its details, it is by no means a guarantee that he is ready in the art of expressing thought either verbally or in writing. Here in my opinion is where the mistake has been made. Teachers have required pupils to memorize definitions, technical terms, verb-forms, rules of syntax, to parse words, and to analyze sentences, and when all this could be done with a tolerable degree of readiness and accuracy, pass them off as able to speak and write the English language correctly.

If it is desirable for the pupils in our schools to learn to use our mother tongue with accuracy, why not adopt in their instruction a more natural and direct method. The arithmetician has learned to add numbers correctly by adding them, the penman to write by writing, and the mechanic has learned how to handle tools skilfully by using them. By no other method can skill in these several operations be acquired, and it is equally true that if the youth of our land are ever taught to speak correctly, and to write fluently, it will be accomplished by constant drill in speaking and writing. Some may say that no one pretends to teach or can teach without requiring his pupils to use language daily, nay, hourly. True, but the language they use is not their own, except to a very limited extent. As soon as they are required to cut loose from the expressions found in their books and frame sentences of their own, the results are so wretched and unsatisfactory, that some teachers give up in despair, and are best satisfied when Mary and John adhere strictly to their text-book.

We need a complete divorce in our language lessons from all rules and definitions in the primary grades and the lower classes of the grammar schools, and the substitution of a carefully-prepared, systematic course of instruction in talking and writing. These should be commenced with the advent of the child into the school-room, and be continued daily, until he finds no difficulty in covering a fool's cap with original thoughts, grammatically expressed, upon some familiar topic, that he would in solving a simple problem in interest. He should not only be able to write this fluently, but also be able to stand at his desk and talk easily and correctly in connected discourse for five, ten, or fifteen minutes. The benefit which a pupil would derive from an ability to do this cannot be over-estimated. It would be of immense benefit to him in every department of his school work, and, after his school days are over, and he becomes an active member of society, and a participant in public affairs, the very fact of his being a person of ideas coupled with a graceful and easy way of expressing them, would cause him to be a man of influence and a leader.

That a course of language lessons can be arranged, by means of which these highly desirable results can be obtained by the ordinarily intelligent pupil, trained by such teachers as the times demand, I have not the slightest doubt. At any rate, the system which has been followed for so many years has been productive of so little good, and the results which should be accomplished are so valuable and momentous, that we as teachers should make a persistent effort to abolish for ever this dead semblance of language teaching, and substitute for it a living reality.

STAND FIRM.

Teachers, like preachers, are too sensitive. If Huxley or Tyndall squint towards religion, theologians fairly bristle. If a supposed enemy or ignorant friend comments adversely on the public schools, educators get the tremors. Seeing this, literary hacks, who are paid by the column for their dirt, do not fail to make the best of the opportunity thus afforded for a sensation. Having discovered "game" in the "school question" they proceed to "work it up" with a zeal characteristic of such persons.

While educators, much to the disgust of sensible people and to the amusement of the Bohemians, doubtless, have been driven into an attitude of chronic defence, too many of the educational journals are with servile hats, bowing apologies and putting sniffing I-didn't-mean-it and we-won't-do-so-again into dignified editorials. All of which we look upon as not only unfortunate for the cause, but belittling to the profession.

There is no practice of teachers so humiliating as that of seeking wisdom from every garrulous interloper upon their proceedings, and paying humble respect to every narrow-minded old-fogy that is mean enough to abuse them.

The public schools need no defence. Where they are right, let us say so. Where they are wrong, let us say so. To claim they are perfect is folly. To assert they are utterly bad is worse than folly. To admit they have faults is good sense. To right them where they are wrong, is what every teacher is eager, even anxious to do as every sensible person knows.

Three principal charges are made against the schools : They are too mechanical ; they are too expensive ; they unfit youth for practical life.

To the first we have to say . It is true. No one knows it better than teachers themselves. But the fault is not in the schools or in the system. It is in the teachers. System is necessary, inevitable ; poor teachers are not. The better the system the better the teachers required to work it. The best system will soonest dominate a weak teacher. A strong teacher alone can resist and dominate a vigorous system. This is just as true of superintendents as of subordinates. School boards are disposed to think that a good system can be run by cheap teachers, whereas the better the system, the greater the injury it will effect with poor teachers. The remedy for all this is better teachers. Better teachers will come with better pay. Teaching brains cost money, just as any other brains.

Ergo, dear public, stop whining, put your hands into your pockets, and produce that which, and which alone, as you well know, will cure the evil. Pay good prices and your schools will be good. Pay for brains, too. Do not pay high prices for bricks, and then try to economize on brains, as you are now doing.

The schools are too mechanical, we admit. They are so because they are cheap. They are cheap because the public so wills. The truth of the charge is not denied. The responsibility for it though we, as teachers, respectfully decline to assume, and therefore we do not defend or excuse, on the other hand we accuse you, dear public, and claim that you are the offenders and we are the sufferers.

Another matter in this connection. The school system will be bad as long as school boards make the schools a species of almshouses where unfortunate widows and needy relations are maintained at public expense. When it is remembered how many incompetent but needy teachers are annually elected by hearts instead of heads, it will not be at all surprising that the schools are mechanical. Now, honor bright, dear public, is it quite just to blame teachers and systems for this weakness ? You are the guilty party. You elect your school boards—teachers do not. You encourage them in this favoritism and eleemosynary weakness. Every superintendent in the land would cut it out as fatal a gangrene. You are the culprit, your teachers and your schools the sufferers. But instead of manfully acknowledging it, you try to cloak your guilt by sneaking into the papers and raising a stop-thief cry of abuse of the schools. Think you that we will gratify you by defending ourselves against your insults ? We make not a single excuse, we accuse. The schools are not to blame, the teachers are not to blame. The sin is upon an indifferent, lazy, fault-finding, corrupt public. We fling your charges back upon you, dear accusers.

Again, it is said the schools are too expensive. We deny it, point blank ; and charge back upon you, dear public, that you are mean and parsimonious in the payment of your teachers, and to this meanness and parsimony is mainly due the insufficiency of your schools. Every just person knows the truth of this. Compared with any other public officer, and taking into consideration the

ability and duties required, the teachers are paid disgracefully low prices. The laziest and most incompetent teacher in the schools more than earns all he is paid, as compared with the average county officer.

While there has been much spent on buildings and wasted on architectural "jobs," most of which has been since "saved" from teachers salaries, we maintain that too much has not been spent on school buildings. A majority of the school children to-day are being taught in miserable dens compared with the quarters of county officers, and of criminals, paupers, the insane and idiots. Why these classes are entitled to more elegant surroundings than the teachers and children of the best people of the land, we do not and will not understand. They are not. If court-houses are carpeted, school-houses should be. If county officers are entitled to walnut furniture, cushioned chairs and stationery free, teachers are entitled to the same. If retrenchment must be, it should be upon the thousands of state, county and township officers and offices and nameless other government expenses—not upon the schools and teachers. Ah, dear public, you claim to be so enlightened, so friendly to education and progress, yet when hard times come, you starve and grind your teachers, first and only, while other public expenses are too sacred to touch. Other officers enjoy their extravagant salaries and fat perquisites, without a murmur from you. Isn't there a shade of hypocrisy as well as injustice in this? But this is not all. You go on from hypocrisy and injustice to meaner meanness by trying to charge upon us teachers the responsibility for failure in things for the accomplishment of which you do not supply decent remuneration or necessary facilities. But this is not all. To this injury you add the insulting demand that teachers shall not only bow and scrape their acknowledgments to you for their present meagre requital, but they must beg, and cringe, and wire-work, and bribe to prevent you from robbing them of the contemptible pittance you have grudgingly allowed them from your untold abundance. We do not defend, or excuse, dear public. We accuse, nay, we denounce you, not from unworthy or spiteful motives, but because we are right and you are wrong. We are the sufferers, you the unrighteous cause of our suffering.

Again, it is said the schools unfit children for the lower walks of life, making them discontented with humble pursuits, and encouraging them to crowd the more respectable avenues of employment.

For shame, dear public, for shame! What is it, you ask? Would you have us teach your children that they are inferior, and must remain so! that they are filthy, and must be filthy still! that they are naked, and must never hope to be clad! that they are ignorant, and knowledge to their eyes, "her ample page, rich with the spoils of time," must never unroll! that they are poor, and should never dream of being rich! that they are of humble rank, and should never aspire to anything higher? Have you provided us any textbooks in which we can assign such lessons? Have you any history from which we can draw such sentiments? Do the lives of your great men furnish such teachings? Does your literature supply such anecdotes? Does the unparalleled growth and development of your nation point out such a moral or adorn such a tale? Again we cry out: For shame!

Consider who you are, dear public. What is your origin? Whence your rank, your power, your wealth, your intelligence? During the last century thousands of emigrants have poured in upon our shores. The majority of these were from the lower, poorer, and more ignorant classes of Europe, where, had they remained, their children would to-day have been dragging out the miserable existence their fathers escaped by emigrating. Dear public, these were your parents. You are their children. This would have been your sure fate. But how different! And why? Because of the public schools. You have become wealthy and aristocratic, and fat and fussy, and possibly envious, perhaps alarmed, lest "upstarts" shall displace your children as you did some one else's. You take on great airs about people of humble circumstances who are ambitious to reach the higher walks, and against the public schools that encourage them to it.

Because a hired girl will not be crushed by one of your snobs, finding out that she has been in the public schools, he proceeds to denounce and abuse them in a respectable monthly for unfitting girls to be servants, whereas that same snob would probably find out, by further inquiry, that his mother was once a servant, but saved him and his sisters from a similar fate by sending them to the public schools, which gave him sufficient education to vilify them in a high-toned journal for blessing others as they blessed him.

If a committee of these snobs will devise a school system to suit

their purposes, that is, that will train Americans who are down to stay down, so that they and theirs who are up may stay up, we predict, that in order to use it they will have to emulate their poor ancestors in one regard, namely. They will have to emigrate. Such a system would suit aristocratic Germany or England, but America, never.

This is one charge, dear public we confess to. We assume the whole responsibility. We make it our proudest boast. We do unfit the masses for servile drudgery by trying to inspire in their every heart a noble, holy ambition to excel, to improve, to strive for the highest and best. Such teaching produces a Lincoln who, steps from his rails above an Adams.

In asking anything else of us you are traitors to every sentiment of our institutions. You shallow, shoddy public! You besotted, selfish snobs! You snappish, disappointed female politicians! You bigoted, stall-fed literary swells! Think you that teachers or the friends of the schools will waver because of your high-priced snip-judgments? They should not argue with you they should strike you. You merit not reason but rebuff. To debate with you is toadyism, cowardice. Saying this is not mere bravado. It is justice, because you are disastrously wrong, and we are grandly right; and immense, immortal interests are at stake. *The Normal Teacher.*

Practical Department.

WHAT ARE THE OBJECTS OF A RECITATION?

To test the pupil's preparation. A lesson that is not to be recited will not be properly prepared—probably not prepared at all. Pupils ought to be tested, first of all as to what they know about the lesson themselves. They should know that it is their duty to bring out what the lesson contains, and not to be mere receptacles for the teacher to pour into and fill up. The proof of a pupil's preparation is his ability to express clearly the ideas and facts of the lesson. The idea will be obscure and imperfect in proportion to the obscurity and incoherence of the language used in recitation. I believe there are some ideas for which we have no words, but they are not in this account. When pupils say, "I know, but I can't tell or write it," they should say "I don't know it well enough." Knowledge and its expression are so intimately united that the former does not commonly exist without the latter, and hence testing a pupil's knowledge of a lesson is the same as testing his ability to express it. In this way the recitation contributes greatly to the acquirement of a command of language, and of ease and correctness of expression.

The recitation enables the teacher to correct errors. Errors of statement, errors of fact, errors of inference, errors of language, errors of observation, and errors of preparation. Advice in the way of preparing a lesson is often a great incentive, and saves a pupil a great deal of time and worry and disgust.

Another object of the recitation is to train pupils to be self-reliant, and to be sufficiently self-confident. In most of our schools it is impossible to prevent pupils from helping each other too much in the preparation of lessons. In many classes one or two do all the thinking; the others copy. This may be detected in the recitation. Then each is to be put upon his own responsibility. The fact that each must rely upon himself in recitation checks to some extent this slavish dependence too commonly seen in our schools. Timid pupils acquire sufficient courage, and those whose tongues outstrip their judgment, learn under the fire of criticism, to be more modest.

The recitation enables the pupil to remember what he learns. It is well known to us all, that the more frequently we tell or write what we think about, the better it is retained, and unless we do repeat what we learn, we are by no means sure of it. The recitation affords a means of fixing facts and impressions, not only by this means, but by concentrating the mind upon them, discussing them, and eliciting criticism upon them.

The recitation gives the teacher an opportunity to add new matter to the text, both as to fact and illustration. This is not necessary in every case, but it is usually desirable and necessary for the teacher to make use of new illustrations at least, in the recitation. No author can introduce, much less elaborate, all the illustrations needed for explanation. Besides, pupils take more delight in reciting, and in all school work, if the teacher gives them something more than is contained in the book, or requests them to look up some matter on the lesson not found in the text.

It is an object of the recitation to give encouragement to pupils,

and to hold out to them proper incentives to study. It is more common for teachers to find fault with their pupils in recitation than it is for them to commend what is excellent. Why should not that which is well done be commended? Indiscriminate praise is disgusting, but properly bestowed, how good it is.

I have found it quite desirable at times to explain to pupils the purpose of study, or of certain branches of study. It is a relief to know that the toil of study is not to be fruitless, to know that the mental drudgery at the threshold of every branch of learning is not to be done for fashion's sake. The American question, "What's the use?" will come up, and, while pupils are not the proper judges as to the curriculum, I know by experience, that it is a relief and encouragement to see the use.—*Penn. School Journal.*

"TILL THE DOCTOR COMES."

By J. W. McLaughlin, M. B., L. R. C. P., L. R. C. S., Ed.

Accidents of various kinds occur almost every day, and much suffering has to be endured, and life is often sacrificed, because neither the injured one, nor his companions have any knowledge of the means to be adopted for relief. To supply this knowledge in regard to some of the common accidents, is the object of the following rules and suggestions:

The first rule, and it is an important one, applies to those who would render help. It is, *keep calm and self-possessed.* "Hasten slowly."

BLEEDING AND HOW TO ARREST IT.

There are two simple methods of arresting bleeding—

First.—By *elevating* the wounded part. If the wound is in the head or neck put the patient in the sitting or standing posture, unless fainting come on, and then he must be put in the recumbent position. If the wound is in the foot, leg, hand, or arm, place the patient on his back, and raise the limb as high as possible above the level of the body. In many cases this plan is all that is necessary.



FIG. 1. Jet or spurt of blood from a wounded artery. This jet will appear once for each pulsation or beat of the heart.

Second.—By *pressure* which is intended to close the vessels, from which the blood comes. The *place*, where the pressure is to be applied, is determined by the character of the blood escaping; if it is of a dark color and flows in a steady stream, it is *venous*, and pressure should be made *upon* the wound. If it is bright-red and comes in jets or spurts, it is *arterial*, and pressure must be made *above* the wound, or between it and the heart.

There are two methods of applying pressure.

First.—The fingers or hand, or a solid pad, folded handkerchief, cap or stone, held in the hand, is pressed upon the wound or the course of the artery, with sufficient force to arrest the flow.

Second.—If a limb is wounded and the blood is venous, place a pad *upon* the wound; if arterial place it *upon* the *course of the artery*; then over the pad and around the limb tie a piece of rope, cord or handkerchief, and beneath this insert a piece of stick, and twist it until the bleeding ceases. (Fig. 2). If the course of the artery is unknown to the operator omit the pad, and proceed as above described without it.



FIG. 2

Should it be necessary to remove the patient to his home or a hospital, do so gently and watch the wound closely. If any

oozing commences, increase the pressure. After reaching his destination, keep him quiet "Till the Doctor comes."

FRACTURED OR BROKEN BONES, AND WHAT TO DO WITH THEM.

Symptoms.—When a bone is broken, a snap is generally felt or heard by the patient, followed by severe pain. A fractured limb is shortened and deformed, and may be moved in almost any direction, except when only one bone of a pair is broken. When moved the broken ends of the bone grate against each other. The popular belief, that there can be no fracture if the fingers or toes of the limb can be moved, is erroneous. "Till the Doctor comes" a broken bone should be kept at rest, in an easy position. But if the patient has to be moved, to be taken to a place of shelter, his home, or a hospital, it is necessary to *secure* the fragments, in order to prevent their sharp ends tearing into the flesh, or penetrating the skin, and thus adding, to the fracture, a dangerous complication.



FIG. 3.

The severe pain of broken ribs may be relieved by fastening around the chest, a wide cotton or woollen roller.

To accomplish this, one person will extend the limb until its full length is attained, and the deformity gone; another will apply temporary splints, such as splinters of wood, bark, twigs, folded coats, or vests, and tie them firmly around the limb with handkerchiefs, shoulder braces, pieces of harness, or ropes of twisted hay or straw. (Fig. 3). If the fractured limb is a leg, fasten it to the sound one, and both to a board beneath. (Fig. 4). Thus fixed, the patient may be taken to his destination, and await a surgeon's attendance.



FIG. 4.

POISONED BITES.
The bites of mad dogs and poisonous snakes are generally inflicted on the limbs, and should be treated by tying a cord or handkerchief around the limb above the wound and twisting it (Fig. 2.) in order to prevent the poison entering the general circulation. The poison should be sucked out, or destroyed by applying to the wound a red-hot iron, strong nitric acid, or caustic. In the case of snake bites-stimulants should be freely given.

POISONS.

As a precautionary measure, keep every bottle, box, or parcel of medicines, or chemicals, labelled and out of the reach of children. In every case in which a poisonous substance has been swallowed, induce free vomiting with the least possible delay by tickling the back of the mouth with a feather or finger, or by giving large quantities of luke-warm water, containing a couple of teaspoonfuls of mustard or common salt, and in addition use the following remedies:

SPECIAL POISONS.

- All acids, such as sulphuric, nitric, &c.
- Potash, lye, hartshorn.
- Opium, laudanum, paregoric, morphia.

REMEDIES.

- Powdered chalk, lime water, magnesia, soap-suds.
- Vinegar diluted with water, lemon-juice, sour cider.
- Prevent sleep for twelve or fourteen hours, keep the patient walking, slap the body briskly, give strong tea and coffee.

SPECIAL POISONS.

Arsenic, rat poison, Paris-green, &c.

Bug poison, corrosive sublimate.

Tobacco.

REMEDIES.

Give milk and raw eggs abundantly, lime water, or flour and water.

White of egg mixed with water frequently, and milk in the intervals.

Strong tea and coffee, and hot applications to the body and limbs.

INSENSIBILITY.

Persons become giddy and fall insensible from two directly opposite causes.

First.—A deficiency of blood in the brain, or fainting, indicated by death-like pallor, and a cold, clammy skin.

Treatment.—Put the person upon the back with the head as low as the body, or even lower, dash cold water in the face, and give access to plenty of fresh air.

Second.—Excess of blood in the brain or apoplexy. The face is livid, the eyelids puffed, the breathing difficult.

Treatment.—Loosen everything around the neck, place the person in a sitting position and apply cold to the head "Till the Doctor comes."

BURNS AND SCALDS.

These should always be regarded as very serious accidents, especially when considerable extent of surface is involved, even if the depth of the injury is but trifling.

The indications of treatment are:—

First.—*Stop the fire.* Immediately envelop the sufferer with a shawl, coat, piece of carpet, anything to exclude the air, and thus extinguish the flame. Next pour on plenty of cold water (and do the same in case of scalds), for the cinders or boiling water in the clothing may be eating into the flesh.

Second.—*Remove the clothing.* With a sharp knife or pair of scissors, cut through all the garments so that they will readily fall off the body. Never undress one burned or scalded, for in so doing large portions of injured skin are often removed, and in consequence, suffering is increased, and the hope of recovery dimmed.

Third.—*Put the patient into a warm bed and exclude the air from the wounds.* To exclude the air apply cotton rags or cotton wool saturated with caron oil (equal parts of linseed oil and lime water), or warm milk and water (equal parts) with a tea spoonful of baking soda to the quart, or fine flour.

Fourth.—*Give the patient no stimulant but hot coffee and milk "Till the Doctor comes."*

RECIPE FOR MAKING COMPOSITION BLACK-BOARDS ON THE WALLS OF SCHOOL-ROOMS.—For 20 square yards of wall—take 3 pecks of mason's putty, 3 ditto of clean sand, 3 ditto of ground plaster; 3 lbs. lampblack, mixed with 3 gallons of alcohol. The alcohol and lampblack must be mixed before it is put into the plaster. Now rapidly mix the materials and put them on as hard finish is put on. A narrow trough should also be placed below the black-board to receive the chalk and wiper.

THE TONIC SOL-FA METHOD OF SINGING.

BY J. L. ROBERTSON, TORONTO.

The tones of the scale having been learned, and a readiness in producing them when taken promiscuously on the modulator, acquired, the student may proceed to deal in the same manner with those above and below it. The same relationship exists in every

major scale, that is, the semitones or half tones are between *m* and *f*, *t* and *d*; the others being full tones. He need not for practice, at this stage, be particular to have an exact standard for the key-note, *doh*, as a piano or organ may not be always available. Instructions for obtaining the correct key-note are given below.

In the modulator *d, m, s*, are printed in Roman capitals, to indicate that when sounded simultaneously they produce the harmony of the strong chord; *r, f, l*, in Italic capitals, to show that they form the weak, plaintive or leaning chord. In harmony combinations of these tones are taken in several ways, according to scientific rules, and varied to suit the taste of the composer. The Tonic Sol-fa system enables a learner to study harmony almost from the outset, while in the staff system this delightful acquirement is kept back from the pupil until he has attained considerable proficiency.

(2) Persons accustomed to sing know that a tune may be sung too high or too low to suit some notes in it; the intervals are correct but the pitch of the voice is at fault. A lower or a higher key-note is required to give free scope. This plainly indicates that there is such a thing as a movable key-note, for the voice ranges with the same effect, as far as the tune is concerned, while the pitch differs; for instance, the National Anthem may be sung by four or more persons in just so many different keys, but the air of the tune is identical in every case. That being so proves clearly that we need not learn fourteen scales, as in the old notation, *v. s.* have only to make ourselves familiar with one representation of the scale, and that suffices for every degree of pitch. To ascertain this pitch, or in other words, to find the key-note, we must have some standard by which it is determined. A tuning-fork that gives 512 vibrations in a second will produce C in the upper octave, or C¹, and as the scale of C is the standard or natural scale, any note in it may be taken as the pitch-note or key-note which the music requires. The Tonic Sol-fa scale may then be applied to the standard, and C being determined by the tuning-fork any other note can be found from it. For example, suppose we want to sing a tune in Key G. The

tuning-fork gives us C¹, which we call *d*¹, and singing down the scale we stop at *s*, and changing the name of that sound into *d* we have the key-note of G. It is then well to sing that scale or its chords, to familiarize our ear with its tone relationship, previous to commencing the tune. In the extended modulator which is given in this article, the key of G is the first one on the right, or the first sharp key. On comparing it with the natural key in the centre it will be observed to differ from it only in *t* which is higher up than *f* to give the needful semitone between *t* and *d*; that is the same as making *f* a half note higher, which in the old notation is indicated by a sharp, placed on the top line of the staff, meaning that all F's are to be made sharp. In the key of F, or when F is *d*, as

in the first column to the left, the difference between it and the key of C is, that as the semitone must come between the third and fourth notes in the scale, *t* is half a note too high, and a flat is used to show that all the B's must be a semitone lower; and this symbol is placed on the middle line of the staff which is the position of B. Compare the other keys in the same manner. In the Tonic Sol-fa we have to take no notice of what notes are sharpened or flattened in the different keys, we find the pitch of the key-note and the tones of the scale fall into their natural places. Thus the mind is not burdened with thinking of where the sharps and flats ought to come, nor perplexed with the counteracting influences of naturals, double sharps, and double flats.

The chromatic scale, accidentals, and transitions will be explained hereafter.

THE MODULATOR, PARTLY EXTENDED.

FLAT KEYS. B \flat F		NATURAL KEY. C	SHARP KEYS. G D	
l	r'	s'	d'	f'
s	d'	f'	t	m'
	t'	m'	l	r'
f				
m	l	r'	s	d'
			t	
r	s	O' DOH'	f	
		B TE	m	l
d	f	ta le	r	s
t	m	A LAH	d	f
		la se	t'	m
l	r	G SOH	l	r
		fe		
s	d	F FAH		
t		E ME	l	r
f		ma re		
m	l	D RAY	s	d
		ra de	t	
r	s	C DOH	f	
		t	m	l
d	f		r	s
t	m	l		
l	r	s	d	f

medium, and weak to indicate the pulses and the general expression. Some musical phrases are sung loud and are then marked with *f* or *ff* (*forte, fortissimo*), and others soft, marked *p* or *pp* (*piano, pianissimo*), but this does not interfere with the general accentuation of every measure.

The continuation of a tone beyond one pulse is indicated by a dash in the following pulse, or as many as are required, thus :

| d : d | d : - | d : - | - : - |

The half pulse is shown by a period (.) ; the quarter by a comma (,) ; and one-third by an inverted comma ('). The absence of any note or sign signifies that the pulse is silent, or a rest, as follows :

SUBDIVISIONS OF TIME.

HALF PULSE TONES.—Indicated by a dot in the middle of the pulse space	{ d . d : d . d
PULSE-AND-HALF TONES	{ d : - . d
QUARTER-PULSE TONES.—Indicated by a comma in the middle of each half pulse	{ d , d . d , d : d , d . d
TWO QUARTERS AND A HALF, and a half and two quarters	{ d , d . d : d . d , d
THREE-QUARTERS AND A QUARTER.	{ d . , d : d . , d
THIRDS of a Pulse.—Indicated by inverted commas	{ d , d , d : d , d
	{ d :
SILENCES (Rests) are indicated by the absence of notes in the pulse-divisions, i. e., vacant space ..	{ d . : . d
	{ d , d . d , : , d . d , d

KEY D. THREE-PULSE MEASURE.

{ d : d : d m : m : m d : m : s d' : - : -
{ d : d : d d : - : - m : m : m m : - : -
{ d' : d' : d' s : s : s d' : s : m d : - : -
{ m : m : m m : - : - m : s : m d : - : -

In this exercise one voice or number of voices sings the upper line, and another the lower.

SIX-PULSE MEASURE.

KEY D. Round in four parts.

{ d : d : d d : d : d m : - : r d : - : -
{ Mer-ri - ly, mer - ri - ly, sound the horn;
{ m : m : m m : m : m s : - : s m : - : -
{ Cheer - i - ly, cheer - i - ly, for the lawn;
{ s : - : s s : - : s s : - : s s : - : -
{ Let it ring out loud and long;
{ d' : - : - s : - : - d' : - : - s : - : -
{ On - - ward, On - - ward.

In singing rounds the second voice commences when the first arrives at the note marked with an asterisk, and the third and fourth voices follow successively in the same manner. Rounds are excellent exercises for learning time, which may be marked in three-pulse measure by moving the hand downward for the first pulse in each measure, to the right for the second, and up for the third. In six-pulse do the same twice, but faster. Learn the Sol-fa syllables before the words of the tune are attempted.

(3) The notation of time in the established system is indicated by the formation of the symbol called a note, whether open or closed, with or without a stem, hooks, &c., and the bar or measure is taken as the unit. In the Tonic Sol-fa time is denoted by accents, in a manner similar to that used in scanning verse, and a pulse or regular time-beat is the unit. A long, heavy down-stroke shows the strong accent; a thin, short one the medium, and a colon the weak. The space between two accent marks is called a pulse, and two or more pulses, according to the time required, form a measure, corresponding to the bar in the old notation. These are indicated as follows :

TWO PULSE MEASURE. { S W	THREE PULSE MEASURE. { S W W	FOUR PULSE MEASURE. { S W M W	SIX PULSE MEASURE. { S W W M W W
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The double bar is placed at the finish of a piece of music, and the bracket shows the parts which are to be sung together, such as first and second treble; or first treble, second, and bass, &c., or words and music only. I have used the letters S, M, and W for strong,

Notes and News.

ONTARIO.

The Lincoln High School has made such progress that an application has been made to have it recognized as a Collegiate Institute.

The Kingston Collegiate Institute does not seem to be so heartily supported as it should be. Kingston ought to support a good Collegiate Institute, and it is a matter of regret that its school is in danger of being dropped from the list of Collegiate Institutes.

Mr. J. H. McFaul has been again placed in charge of the Lindsay Model School. We are glad to see that the Public Schools are not to be entirely subordinated to the High School. Mr. Tilley is one of the best High School Masters in the Province, but we are opposed to the principle of giving the control of the Public Schools into the hands of the High School Masters.

The Public School Board in Napanee is prevented from providing necessary additional accommodation by the town council. The 29th clause of the amendments of 1879 is the cause of the trouble.

The Toronto Public School Board has opened a special school for vagrant children, confirmed truants, and those who can only attend school during one half of each day. The room is furnished by Mr. W. H. Howland, and the books, stationery, etc., by Mr. W. J. Gage.

Mr. A. Embury of the Perth Collegiate Institute has been appointed Mathematical Master in Brockville High School at a salary of \$900 per annum.

The Minister of Education proposes to take the Ontario Art School under the direct control of the Education Department. This ought to be greatly to the advantage of the school, and of art education in the schools of the Province. There is no other collection in America so well calculated to aid students in an art school, as that in the Normal School Museum, Toronto.

The Toronto Normal School has opened with its full number of male and female students.

The County Model School Session is to be lengthened to three months in future.

Temperance is to be taught in the Normal Schools of Ontario. Dr. Richardson's text-book is to be used by the students. It is already used in some of the English Schools.

We are pleased to see that Mr. McNevin, late Mathematical Master in Caledonia High School has been appointed to a similar position in Walkerton High School. We congratulate the people of Walkerton on their choice, and predict for their school a new era of prosperity.

The distribution of prizes at Upper Canada College took place on September the 30th. The occasion was one of unusual interest, as it marked the close of the connection of Principal Cockburn with the institution. He was the recipient of a beautiful dressing-case from his pupils, as a token of the esteem in which they held him. He delivered a valedictory address in which he reviewed the history of the College and showed its success in winning University Honors.

Rev. E. A. Boddy, Fellow of St. John's College, Cambridge, (Eng.) has been appointed Provost of Trinity College, Toronto. Mr. Boddy is a comparatively young man, having been born in 1851, and is the son of the Rev. E. E. Boddy, vicar of Woneish, near Guildford, Surrey. He was educated privately, and entered St. John's College, Cambridge, as a Minor Scholar, in 1871. In the next year he obtained the Bell University Scholarship, open only to the sons of clergymen. His college career was a most successful one, as he obtained the first place in each annual examination, and that is no easy thing for a Johnian to do. In 1873 he was elected to a Foundation Scholarship, and in 1875 took his degree as B. A., coming out as sixth wrangler, and in the following year obtaining honours in theology. In this same year he was elected Naden Divinity Student of St. John's, and in 1878 obtained his Fellowship. Mr. Boddy made his mark in the University by obtaining the Greek Testament Prize in 1876, and the Tyrwhitt Hebrew Prizes in 1878. He was assistant curate of the parish church of Chesterton from 1876 till 1881, and was appointed Lecturer in Theology in St. John's College in 1878, and in Pembroke College in 1880. He has been a member of the Board of Theological Studies in the University and examiner for Cambridge Theological Tripos in 1881, and was twice appointed Select Preacher to the University.

The School of Practical Science, Toronto, opens for its fourth session with an enlarged staff, and we trust that the young men of Ontario will more freely take advantage of the great facilities it offers for giving a thorough practical training in its several depart-

ments. The faculty of the school is made up of Professors Wilson, Chapman, Loudon, Ramsay, Wright, and Pike of University College, and Galbraith and Ellis, who confine their labors to the school. Mr. Galbraith teaches engineering and cognate subjects; Dr. Ellis is Assistant Professor of Chemistry, and the others teach the same subjects as in University College, namely, Ethnology, Mineralogy, and Geology, Mathematics and Natural Philosophy, Biology and Chemistry respectively. Dr. Wilson has been appointed Chairman of the Board of Management, and Alfred Baker, the Registrar of University College, its Secretary. The prospectus gives an account of the development of the old School of Technology into the School of Practical Science, and explains the objects for which the institution was established. These are (1) to give all who desire it a thorough training in (a) engineering, (b) assaying and mining geology, and (c) analytical and applied chemistry; (2) to furnish preliminary scientific training for students entering the professions of surveying and medicine; and (3) to furnish separate courses of study for all who wish to avail themselves of the opportunity. Diplomas, admitting the recipients to the standing of "Associate of the School," are granted in each of the three regular departments after due examination at the end of a three years' course of study.

S. T. Morphy, late of Hawksbury, has accepted the position of Mathematical Master of Listowel High School.

Mr. McBride, though offered a re-engagement at Newcastle High School, has been appointed to take charge of Richmond Hill High School, at an initial salary of \$1,000. Mr. McBride will no doubt worthily fill the vacancy, caused by the retirement of Mr. Carscadden.

Victoria University had a very large matriculating class this year, and, among the others, one of two young ladies. Victoria, which has the honor of the first lady-matriculant in Ontario, is evidently likely to retain this feature in its class.

Mr. W. G. Brown, B.A., an honor graduate of Queen's University, and a graduate of the Ontario Business College, has been appointed Commercial Master of Galt Collegiate Institute. Mr. Brown's principal work in the school will be the preparation of young men, who do not intend entering any of the learned professions, for practical business, by giving them a thorough knowledge of book-keeping, penmanship, arithmetic, and allied subjects.

Renfrew High School Board is about to engage a third teacher.

Pembroke proposes to erect a new High School building.

RESULTS OF THE JULY EXAMINATIONS.—In last month's JOURNAL we stated that Seaforth High School had passed thirteen out of thirty-five candidates sent up. It should have been thirteen out of twenty-five; one A, seven B's, and five C's. Richmond Hill passed fifteen out of thirty; six B, and nine Intermediate. Pembroke High School passed two candidates in Grade B. Smith Falls High School, out of seven Intermediate candidates who wrote, four passed; two in Grade B, and two matriculants in Law. Entrance examination—twenty-one candidates from Smith's Falls Public School, James McCreary, H.M., nineteen passed; eight candidates from the county, five passed.

NOVA SCOTIA.

The fourth session of the Provincial Educational Association in Truro; (July 13th and 14th), was opened, after routine exercises, with a paper on Geometry by Prof. Eaton of the Normal School. The subject was discussed under the following heads:

1. Beginners should get their first knowledge of the geometrical relations by observations of things embodying those relations. They must get some knowledge of geometrical facts prior to any formal demonstration of them. And it will be well if they are trained to exact geometrical construction, and to the arithmetical application of simple principles, before entering upon the study of geometry proper.

2. There is need of a reconstruction of the Euclidean order of propositions. Other sciences present to the learner a properly classified body of facts. Why should geometry, whose essence is logic, be unique in not presenting to its votaries a logical development of subject matter. Euclid's order is unscientific. The order of sequence is well preserved, each proposition depending on preceding ones. The following is an outline of a more systematic plan:—

Straight lines.—Propositions relating to oblique lines, perpendicular lines, parallel lines; and of necessity propositions relating to angles made by lines which simply meet lines which intersect and the secant of parallel lines.

Combination of lines into figures.—1. Triangles: propositions pertaining to relation of sides to relation of angles; to mutual relation of sides and angles; to relation of triangles to one another, viz., equality, similarity and equivalence. 2. Quadrilaterals: propositions relating to mutual relations of parts, and to conditions and consequences of equality, equivalence and similarity. 3. Circles: propositions relating to mutual relations of parts, to mutual relations of circles, and to circumscribed and inscribed polygons.

3. The principles of the science are so closely interwoven with all industrial and mechanical arts, that he who studies geometry only in the abstract sees only half a planet, though a beautiful one. Our school work should be so adjusted that, step by step as the student advances in the unfolding of the geometrical logic, he should be led to see how the great world of human industry is held together by its all-pervading omnipresence.

This able paper was discussed by Principal McKay, the President, and others.

The remainder of the session was devoted to a continuance of the discussion of the proposed course of study. Mr. Burbidge, (Halifax), spoke in terms of general approval. He strongly advocated uniformity of studies, uniformity of text-books, and uniformity of attendance at the Normal School.

Principal McKay called attention to the eminently practical character of the proposed requirements. Messrs. J. J. Parker, Tuttle, Crowell, and McKay continued the discussion.

Professor Eaton thought that there might be two difficulties in reference to the teachers in connection with this matter. 1st, to those who were preparing for examination; 2nd, to those who had received their license. The former would be required to get up work additional to the already prescribed syllabus. This difficulty, however, could be easily obviated by omitting a part of the present requirements, e.g., Which was the more important: physiology, which treats of our systems, "their growth, sustenance, etc.," or English history? Evidently the former. The same might be said of some other branches. And those who might be required to get up in this branch could do so if the plan of our neighbours were adopted, that is, to form "summer schools" during vacations, by teachers meeting at some suitable place, and engaging a good naturalist for an instructor.

At the opening of the fifth session, the election of members of the Executive Committee took place. The following were elected:—Principal McKay, Secretary McKay, Prof. Eaton, Dr. Hall, Miss Logan, Inspector Condon, Miss Russell (Dartmouth).

A. Cameron, Esq., (Yarmouth), read a valuable paper on "Usage of words." In addition to being learned and suggestive, it secured attention by its ingenious departure from the conventional form of Association essays. The writer held that etymological analogies must yield to the force of cultivated usage.

The remainder of the fifth session was interestingly occupied in listening to addresses by the Rev. Dr. Kempt, Principal of Ladies' Academy, Ottawa, and Rev. Dr. Ross, President of Dalhousie College, Halifax.

The sixth and last session was devoted to routine business, and the conclusion of consideration of the proposed course of study.

The adoption of Common School Course, Class I., was moved and seconded. Discussion followed, participated in by Messrs. Lay, Tuttle, D. McD. Clarke, McKittrick, McKenzie (Dartmouth), and King. Class II. was adopted without modification.

Inspector McKenzie thought the Committee must be gratified to find that radical objections had not been taken to the suggestions. No greater blessing could be conferred on the schools of the Province, nor on the inspectors, than the provision of a basis of uniform classification. He spoke with vigor of the imperfect classification now prevailing, which, in the absence of a uniform course, the inspectors were largely unable to remedy. He also approved of the general directions. He laid great stress on the importance of military drill. He regarded the teaching of agricultural chemistry as important. He moved the adoption of Class II., seconded by Inspector Condon.

After discussion by Messrs. Andrews, D. S. Clarke, Fields, Burbidge, and others, Mr. Tuttle moved several amendments, none of which were adopted.

Mr. H. S. Congdon moved to omit "Animal Life" from oral lessons of Class II. Motion was not adopted.

Mr. King moved an alteration in the Arithmetical requirements, and Mr. McKenzie in those pertaining to Writing, neither of which was adopted.

Mr. Burbidge, seconded by Dr. McKenzie, moved adoption of

Class III. The mover alluded to improvement in use of Readers secured by contemplated course. The seconder, Dr. McKenzie, again alluded to the importance of agricultural chemistry.

Inspector Roscoe, on behalf of several teachers, enquired if too much Grammar is not required under Class III (6).

Principal Calkin explained that the requirement was founded on experience of work actually done.

Mr. Tuttle moved that the required recitation under this class be increased to 320 lines. Not adopted. He also moved to add to Spelling requirements, Meanings of Words. Also, under Language (5), to introduce text-book on Grammar. Not adopted.

Class III. was adopted.

Mr. Andrews moved, and Mr. Lay seconded, the adoption of Class IV.

Several members spoke. Mr. Tuttle made several suggestions, which did not meet with favour.

Inspector McKenzie moved, seconded by Mr. McArthur, that Writing series be completed in Class IV. Adopted.

Inspector Roscoe suggested that the Arithmetic included in Chapter IV. was excessive.

Mr. Roderick McKay moved, and Mr. Godfrey seconded, that Simple Interest be substituted for Equation of Payments in Chapter IV. (8). Adopted. Class IV. as amended was adopted.

On motion of Mr. McArthur, the whole Common School Course as amended was then adopted for recommendation to the educational authorities.

On motion of Inspector McKenzie, seconded by Mr. Burbidge, the task of framing an advanced or High School Course was assigned to a committee to report to the Association next year. The following were named and appointed as this committee, which, it will be seen, is of a representative character: Principals Calkin and McKay, Inspectors McKenzie, McDonald, and Pattillo, Professor D. F. Higgins, Professor Eaton, Dr. Hall, Messrs. Lay, Godfrey, and Burbidge.

The Association adjourned at 10.30 p.m., to meet next year according to arrangements of Executive Committee. The impression made on the minds of spectators by the members of the Association as they conducted their business and discussions, was exceedingly favourable.

The enrolled attendance from the various Inspectoral Districts of the Province was as follows:—

District No. 1, Halifax	39
" " 2, Lunenburg and Queen's	5
" " 3, Shelburne and Yarmouth	6
" " 4, Digby and Annapolis	4
" " 5, King's and Hants	45
" " 6, Antigonish and Guysboro'	3
" " 7, Cape Breton and Richmond	1
" " 8, Inverness and Victoria	4
" " 9, Pictou and South Colchester	43
" " 10, Cumberland and North Colchester	24

Total..... 174

MANITOBA.

The Hon. Joseph Royal, M.P., has been re-elected Vice-Chancellor of the University of Manitoba, for the ensuing year.

Messrs. W. Cowan, M.D., and J. A. M. Aikins, M.A., and the Hon. S. C. Biggs, B.A., were elected by Convocation, to represent that Body on the Council of the University of Manitoba.

The new Board of Studies consists of the following members, viz: From St. John's College, the Chancellor and Professor Omeara, M. A.; from Manitoba College, Professor Hart, M.A., B.D., and Rev. J. Robertson; from St. Boniface College, Rev. A. Lavoie, S.T.D., and Professor Chorrer; and from the University Council, the Rev. W. C. Pinkham, B.D., and Hon. S. C. Biggs, B.A.

The Board of School Trustees for Winnipeg has engaged four additional teachers besides the one to fill the vacancy caused by Mrs. Chisholm's resignation. The new teachers are: Messrs. John D. Hunt, A. Springer, E. A. Blakely, John Acheson, and Miss Aggie Eyres. The total staff is 16.

At Portage la Prairie the school population has increased so rapidly that additions have been made to the school-house and a third teacher hired; and at a meeting held recently in that rising town, at which the Rev. W. C. Pinkham was present, the ratepayers authorized the trustees to purchase a site for a new central school, and to have the foundation for the new building laid this fall, and the building itself ready for occupation next summer. The indica-

tions are that Portage la Prairie will be a very strong educational centre.

The Rev. W. C. Pinkham has lately resigned the incumbency of St. James', a position held by him for 13 years, in order to devote his whole attention to the duties of his office as Supt. of Education.

The Rev. Canon Mackay, a well known and most successful Cleric of England missionary, and one of the Professors in Emmanuel College, Prince Albert, North West Territories, has been visiting in Manitoba.

The sale of certain school lands which was advertised to take place on the 19th inst. has been postponed for one month. The Board of Education are naturally anxious that a good price should be realized for them.

At a recent meeting of the promoters of the establishment of a school of Art and Design, a Committee was appointed to draft a constitution, to canvass for funds, and to ascertain the probable salary of a teacher.

Readings and Recitations.

FOR THE SOLDIERS.

- A call came up from the soldiers' camps,
And sounded in our ears,
Above all the roar of the heavy guns,
And the ringing battle-cheers.
It said, "We are fighting for you, for yours,
In the forefront of danger we stand,
We are driving the ranks of the rebels back;
Will you lend us a helping hand?"
- "We give you all of our health and strength,
We are flinging our lives away;
Our days and nights, they are spent for you;
Will you give us just one day?
And the farmers afar, in the Prairie State,
Heard the call as it sounded by;
And they answered the voice from the far-off camps
With a cheerful, whole-souled "Ay."
- A little girl stood and watched the teams,
With their treasures running o'er,
With their loads of the full-eared yellow corn,
Drive up to her father's door;
'Till the rosy apples, and onions white,
And squashes golden and round,
'That the farmers brought of their hard-earned stores,
Lay heaped all over the ground.
- And she said: "Oh, papa, I have nothing to give
That the soldiers would care to hold;
I am so sorry I am so small;
I have neither silver nor gold.
- "There's my doll, and my hoop, and all my toys,
But they don't want those, you see,
And they would not care for the games or the books
Of a little girl like me.
- "I think, papa, it is very hard;
I have thought all my playthings o'er,
And there isn't a thing they would want to take.
I wish I wasn't so poor!
I'm sure there is nothing I would not give
To make their work seem less—"
And here she stopp'd, for her little pet lamb
Was pulling at her dress.
- They had played together, the child and the lamb,
All the long, bright summer days,
It had shared her supper of bread and milk—
She had taught it its winsome ways.
It would run at the sound of its whispered name
To the mistress it loved so well;
And she loved it, her darling little pet,
Far better than I could tell.
- She stopp'd, and looked in her father's face,
And her eyes grew large and wide;
Then she flung her arms round the lamb's soft neck,
And knelt down by its side.
And her eyes grew full of the blinding tears
That she could not wipe away;
And, "Oh, papa, my darling lamb!"
Was all that she could say.

And closer and closer she held it then,
And faster the tears ran down,
'Till she lifted her head, and spoke again
Through the sobs that her words would drown.
"Oh, papa, I never had thought of this!
It is all my own, you know.
Oh, pet, you must go for our soldier: a brave
My darling, I love you so!"

And stronger growing: "Oh, you, papa,
You must not look so grave!
Why, they give up their arms and their lives for us.
It is everything I have!
It isn't much—I'm a little girl—
But perhaps, if you tell them so,
They will take it with all the bigger things—
Oh, darling, I love you so!"

I think the angels looked down from heaven,
With tears in their shining eyes,
At the tearful little upturned face,
And the noble sacrifice.
God love her, and bless her, and save the land
That claims her among its brave,
Who, 'mid their tears, with unflinching hand
Have given all they have!"

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.

MORRISBURG.—The semi-annual Convention of the Teachers' Association of the County of Dundas, was held in the High School building, Morrisburg, on the 8th and 9th of Sept., and was fairly attended. The chair was taken at 10:30 a.m., the President, Arthur Brown, Esq., I.P.S., presiding. The minutes of previous meeting were read by Wm. H. Irvine, B.A., Secretary-Treasurer, and confirmed by the meeting. The meeting was opened by Mr. A. C. Smith reading an essay on Teaching Dictation; how to make it effective, which was handled in a very able and energetic manner. The chief points he insisted on were: (1). The Dictation should be written in exercise books for that purpose. (2). Each book should be examined, and all errors detected by the teacher. (3). Each error corrected by the pupil, and (4). Slates should not be used, nor pupils allowed to correct each others' work. *Officers elected.*—Mr. Arthur Brown, I.P.S., re-elected President; Miss Margaret Rose, Vice-President; Wm. H. Irvine, B.A., re-elected Secretary-Treasurer; Messrs. A. A. Whittaker, A. S. Rose, A. C. Smith, Jas. Flanagan, and P. Jordan, Management Committee. A grant of fifteen dollars was made towards getting fifty copies of the CANADA SCHOOL JOURNAL for members of the Association. Messrs. A. S. Rose, A. A. Whittaker, and H. Callendar to be a committee to secure the requisite number of subscribers. Mr. P. Jordan, an old and worthy veteran of the profession, gave an animated address contrasting the school-houses, teachers, and examinations of 1850 and 1880, which bore high testimony to the present efficiency of the schools in the County of Dundas, and their very marked progress under the untiring zeal, and able superintendence of the Inspector, Mr. Arthur Brown. *Second day.*—Meeting opened at 9:15 a.m., the President in the chair. The roll being called and minutes of previous day read and adopted, the following questions left over from Question Drawer of previous day were brought up: (1). How to close a Ledger, which was answered by J. O. McGregor, M.A., in a very lucid manner. (2). Have intransitive verbs voice, which was briefly discussed by the Secretary, W. H. Irvine. A communication was read, from Mr. Bow, expressing his regret for not being able to be present and address the meeting upon the subject, "How to teach the Alphabet." Messrs. J. O. McGregor, M.A., A. S. Rose, Danl. Earl, P. Jordan, and Wm. Brunton were appointed to be a committee to secure the erecting of a monument to the late Irvin Stuart, B.A., late Head Master of Morrisburg High School, who was intimately connected with and took a very active part in all affairs of the Association since its beginning, as well as in the Educational advancement of the County, and whose demise is deeply regretted by all the teachers in Dundas. Miss Julia Thompson, of New York, gave a very practical and instructive address on Elocution, which showed a thorough knowledge of the subject, which was attentively listened to, and highly appreciated by the members. W. A. Whitney, Esq., M.A., Head Master of Iroquois High School, gave illustrations of a concise manner of solution of several intricate problems and theories in Algebra. The Question Drawer being then passed, the meeting adjourned until 1:30 p.m. *Afternoon session.*—After the general routine of opening, the Audit Committee reported that there was a balance of \$79.97 on hand on 1st Jan., 1881. The Secretary, W. H. Irvine, B.A., gave his views concerning The Unitary Method vs. Rule of Three, which excited

considerable discussion among a few of the members. The Association was adjourned to meet at Iroquois on the second Thursday and Friday in February next. On Friday evening a public lecture was delivered by Mr. J. B. Watson, in Merckley's Music Hall, to an appreciative audience.

RESTIGONCHE.—The fifth annual meeting of Restigouche County Teachers' Institute was held at Dalhousie, on the 7th and 8th ult. The President, Rev. M. Nicholson being absent, Vice-President, Inspector Cox, took the chair. The Officers for the ensuing year were then elected, viz.:—Rev. Thos. Nicholson, President; P. Cox, A.B., Vice-President; J. M. Palmer, A.B., Secretary-Treasurer. W. Firth and Miss Nancy Robinson, additional members of committee. It was decided to hold the next annual meeting at Campbellton, on the Thursday and Friday immediately preceding summer vacation. The following programme was then taken up, a short time being devoted to the consideration of each subject:—"Faults of Speech and how to correct them," "Learning and Health," "How to Secure a High Moral tone in School," introduced by Mr. Firth. "School Discipline," introduced by Mr. Dawson. Address on "The Properties of Light," by Mr. Ross. "Importance of Industrial Drawing," "Best Method of Teaching Grammar," "An Object Lesson," by Miss Sharpe. "Best Method of Teaching Geography," "Necessity of Cheerfulness on the part of the Teacher," "The Plant and what it feeds on." During the session greetings were exchanged with Carleton County Institute. The Institute adjourned to meet next year at Campbellton.—J. W. PALMER, Secretary.

NORTH ESSEX.—The Teachers' Convention for North Essex will take place at Sandwich, on the 27th and 28th of October next.

NORTHUMBERLAND.—The next regular semi-annual meeting of the Teachers' Association of the County of Northumberland will be held in the Collegiate Institute, Cobourg, on Thursday and Friday, the 6th and 7th inst. Programme, *Thursday*—10 to 12, Preliminary session, appointment of auditors and nominating committee, educational periodicals, miscellaneous business; 1.30 to 2.30, English Grammar, the verb, Mr. G. E. R. Wilson; 2.30 to 3.30, "How to Conduct a Recitation," Mr. A. G. Knight, M.A.; 3.30 to 4, "Use and Abuse of Text-books in Teaching," Mr. D. I. Johnston; 4 to 5, Home lessons, Mr. W. E. Bartlett; 7.30, Lecture, "Mistakes in Education," Rev. S. S. Nelles, D.D., LL.D.—admission free, Lecture in the Assembly Room of the Collegiate Institute. *Friday*—9 to 9.30, Auditors' report, miscellaneous business; 9.30 to 10.30, Elementary Physiology, Mr. R. K. Orr, B.A.; 10.30 to 11.30, Drawing; 11.30 to 12, Election of officers, time and place of the next meeting; 1 to 2, Question drawer, Messrs. Orr, Ellis and Ash; 2 to 3, Uniform Promotion Examinations, Inspectors Tilley and Scarlett; 3 to 4, Geography, Mr. S. Dixon. Questions for the Drawer to be forwarded to the Secretary or any member of the Committee, or handed in not later than 2 p.m. of the first day. D. C. McHenry, M.A., President; D. E. Stephenson, Secretary.

STORMONT.—The ninth half-yearly meeting of the Stormont Teachers' Association will be held (D.V.,) on the 6th and 7th inst., in Mr. Duvall's Hall, Newington. The opening session of each day will commence at 9 a.m. Programme, *Thursday*—Opening address, by the President; Reading minutes, by the Secretary; Short methods in Arithmetic, Mr. Cool; Algebra, Mr. Casselman; Reading III. and IV. Books, Mr. Wallace; Evening lecture, by the Secretary. *Friday*—Business reports; &c.; Notes of the Provincial Teachers' Association, by the President; "Goldsmith" and "Cowper," Mr. Smith; Drawing, Mr. Casselman; General discussion on Pronunciation. It is to be hoped that all the teachers will be in attendance on the forenoon of the first day, so as to derive the greatest possible benefit from the meeting.—A. McNAUGHTON, President; Geo. BULLOW, Sec-Treas.

PRESCOTT.—The next convention of the Teachers' Association of the County of Prescott will be held at Vankleek Hill, on Friday and Saturday, the 14th and 15th inst. Programme, *Friday*—Part 1st, 9 to 12 a.m.—"The Teacher," Opening address, by W. J. Summerby, I.P.S.; "How to Teach History," F. Bisset, J'Original, and Alexander Johnston, Fournier; French Grammar, A. Daoust, St. Eugene. Part 2nd, 1.30 to 4.30 p.m.—English Composition, T. Otway Page, B.A., Vankleek Hill; Arithmetic, N. G. Ross, Plantagenet; The Essay, C. K. Gray, Vankleek Hill; French address, O. Duford, Assistant I.P.S.; Part 3rd, 7 to 10 p.m.—A grand literary and musical entertainment, consisting of recitations, readings, solos, duets, anthems from an efficient choir, and addresses from the clergy and the leading men in the teaching profession. *Saturday*—Part 4th, 9 a.m. to 1 p.m.—"Newspapers," J. A. Houston, B.A., Hawkesbury; "Junior French Reading Classes," J. Belanger, J'Original; "The Proper Method of Teaching Arithmetic in a Public School," Moses Lefebvre, St. Eugene; "Discipline," Henry Gray, H. M. M. S., Vankleek Hill. W. J. Summerby, President; H. Gray, Secretary.

HALTON.—The semi-annual meeting of the Halton County Teachers' Association will be held in the Acton Public School on Thursday, Friday

and Saturday, the 13th, 14th and 15th inst. Programme, *Thursday*—Forenoon session, 10 a.m.—Opening, reading minutes and communications, appointing committees, reports of committees. Afternoon session, 1.30 p.m.—Roll call; "How to Teach Tablet Reading Lessons," Geo. W. Ross, Esq., Strathroy; "Discipline," Miss M. J. Crooks, Burlington; discussion led by Miss L. Meade, Mansewood; "Mistakes in Reading," Geo. W. Ross, Esq. Evening session, 7.30 p.m.—Lecture in the Methodist Church, by Geo. W. Ross, Esq., M.P., subject, "Intellectual Forces." *Friday*—Forenoon session, 9 a.m.—Opening, reading minutes, roll call; "The Teacher's Qualifications," Rev. D. B. Cameron, Acton; "Statics," N. J. Wellwood, B.A., Head Master Oakville High School; Report of committee on Superannuation Fund. Afternoon session, 1.50 p.m.—"Teachers' Salaries," Miss E. McKellar, Burlington; discussion led by Mr. G. N. Peer, Burlington; Class taught by Mr. T. Moore, Acton, lesson "Physical Geography of North America," to be followed by a paper on "How to Teach Geography," by Mr. McLean, Milton, general discussion; "Written Examinations," Mr. D. McLachlan, Nassagaweya, discussion led by Mr. R. Coates, Norval. Evening session, 7.30 p.m.—Lecture in the Presbyterian Church, by Rev. Mr. Thompson, of Ayr, subject "Music." *Saturday*—Forenoon session, 9 a.m.—Opening, reading minutes, roll call; unfinished business; general discussion on Teaching the Definitions and Applications of Words in Reading Lessons; discussion led by Mr. W. Davidson, Bronto; closing business. Robert Coates, Secretary.

PICTON.—The semi-annual convention of the Picton Teachers' Association will be held on Friday and Saturday, 14th and 15th inst., in the Council Chamber, Picton. Programme—Our Text Books; Application of Simple Rules in Arithmetic; Reading; How to Manage a School; Drawing; Moral Instruction in School; Drill and Calisthenics; Reading by a Class; an Object Lesson; Question Drawer. Messrs. Brown, Dobson, Kinney, Murray, Osborne, Rothwell, and others, are expected to introduce subjects. An evening session may be held on Friday evening, the 14th. A full attendance of teachers is expected on both days. G. D. Platt, President; J. Kinney, Secretary.

NORTH HASTINGS.—The next meeting of the North Hastings Teachers' Association will be held at Madoc, on Thursday and Friday, the 6th and 7th inst. These days will be reckoned as visiting days for teachers in attendance at the convention. Programme, *Thursday*—10 to 12, Routine business; Railway system of Ontario, Mr. Rowe; English History, Mr. Kirk; 2 to 5 p.m., Spelling, Mr. Mackintosh, I.P.S.; Geography of North America, Miss McDermid; Reading to Second, Third and Fourth Classes, Mr. Smith, I.P.S., Hamilton. 7.30 p.m., A public lecture. *Friday*, 9 to 12 a.m., Writing, ———, Com. Coll.; Grammar, Mr. Smith, I.P.S.; 1.30 to 4.30 p.m., Canadian History, Mr. Smith, I.P.S.; Address to Teachers, Mr. Mackintosh, I.P.S.; Question drawer. Readings by Messrs. Rowe, Beall and Armour, and Misses McDermid and Christie, will be given during the session of the convention. Geo. Kirk, President; Jessie Riddell, Secretary.

SOUTH GREY.—The semi-annual meeting of the South Grey Teachers' Association will be held in Durham, on Thursday and Friday, the 6th and 7th inst. Programme—Routine business; President's address; Address ad libitum, W. Ferguson, I.P.S.; "Literature," J. Reid, B.A.; "Tonic Sol-fa System of Music," J. W. Robertson, Toronto; "How to Teach Composition," I. C. Buchanan; "Teachers' Encouragements and Discouragements," W. A. Jones; "How to Teach Arithmetic," W. M. Atton; "How to Secure and Retain Order in a Class," M. P. McMaster; "Recitation, its Correct Methods," D. McDonald; "How to Teach Geography," John Reid; Delegates' report, W. J. Galbraith; "Fractions, special reference to use of Signs," F. S. Mearns; "How to Teach Writing," R. Beatty; "Botany in Schools," W. Gorsline; "How to Parse the Verb," N. W. Campbell. Teaching will be illustrated with classes in Geography, Grammar, History, Arithmetic and Spelling. Questions for drawer to be sent to W. A. Jones, Yeovil P.O. A suitable entertainment will be provided for Thursday evening. M. N. Armstrong, President; J. C. Bain, Secretary.

LENNOX AND ADDINGTON.—The semi-annual meeting of the Lennox and Addington Teachers' Association will be held at Napance, on Friday and Saturday, the 14th and 15th inst. The following subjects, among others, will be discussed:—"History," introduced by C. Fessenden, B.A.; "Teachers' Associations," by David Hicks, B.A., Head Master of Newburgh High School; "How to Teach Fractions," by Angus Martyn; "How to Teach Grammar to beginners," by Ralph Tusdale; "How to Teach Drawing," by Michael James; "How to Teach Writing," by J. W. Lyman; "The Railway System of Ontario," by James Bowerman; "Hints to Teachers," by F. Burrows, Inspector. In addition to the above gentlemen, other educationists from abroad are expected to be present to take part in the proceedings. The usual entertainment, consisting of addresses, music, etc., will be given on Friday evening. F. Burrows, President; Geo. Kimmerly, Secretary.

CHATHAM. The semi-annual convention of the Chatham District Teachers' Association will be held on Thursday and Friday, the 13th and 14th inst., in the Central School, Chatham. Programme, *Thursday*—10 to 10.30 a.m., Routine business, 10.30 to 11.15 a.m., Mental Arithmetic, illustrative teaching with a class of children, Mr. E. Best, 11.15 to 12 noon, "How to Strengthen the Power of Observation, as a means of teaching Orthography," W. M. Nichols, B.A., P.S.I., 1.30 to 2.15 p.m., "How to make Grammar Attractive," Mr. W. H. Shaw, Vice-President, 2.15 to 2.30 p.m., Receiving questions for Question Drawer, 2.30 to 3.30 p.m., "Development of Character in the School-room," Rev. J. R. Battisby, 3.30 to 4.15 p.m., Report of Committee on School Diplomas, *Friday* 9 to 9.45 a.m., President's Report of Ontario Teachers' Convention, 9.45 to 10.30 a.m., Geography, illustrative teaching with a class of children, Mr. S. Knight, 10.30 to 11 a.m., Registration of members, Secretary and Treasurer, 11 to 12 noon, Lecture on Elocution, Miss Lewis, Elocutionist, Toronto, 1.30 to 2.30 p.m., "On the Principles and Uses of Models and Diagrams in School," W. E. Hamilton, B.A., T.C., D., 2.30 to 3 p.m., Answers to Questions in the Question Drawer, 3 to 4 p.m., "Facts and Dates of English History (Memoria Technica), J. Donovan, Esq. A literary and musical entertainment will be given on Friday evening, in the Temperance Hall, Seane's Block. Readings by Miss Lewis, Teacher of Elocution, Toronto. W. H. Coles, Esq., President, in the chair.

WEST LAMBTON. The next regular meeting of the West Lambton Teachers' Association will be held at Petrolia, on Thursday and Friday, the 13th and 14th inst. Programme, *Thursday* 9.30 to 10, Business meeting, 10 to 11, Arithmetic, Decimals, Hugh Beaton, 11 to 12, Composition, Miss Langton, 2 to 3, Reading, Second Class, R. McWhorter, 3 to 4, "The Judicial Functions of the Teacher," G. W. Ross, 4 to 5, "How may our Association be made more efficient," James McLurg, *Friday* 9 to 10, Canadian History, W. S. Howell, 10 to 11, Hygiene in Schools, Wm. Sinclair, B.A., 11 to 12, Query Drawer, Messrs. Hunter, Wark and McLurg, 2 to 3, History, Intermediate, J. P. Balfour, 3 to 4, Dictation and Spelling, J. B. Wynn, G. W. Ross, M.P., will deliver a lecture on Thursday evening. Each teacher must come prepared to discuss the subject marked in programme sent him. All questions for Query Drawer to be handed in during the first day. John Brebner, President; John Johnstone, Secretary.

WEST MIDDLESEX. The next regular meeting of the West Middlesex Teachers' Association will be held in the basement of the Presbyterian Church, in the Town of Strathroy, on Thursday and Friday, the 13th and 14th inst. Programme, *Thursday*—1.30 to 2, President's Address, Mr. A. L. Leitch, 2 to 3, Canadian History, Mr. R. McLean, 3 to 3.30, Class Movements and Manners, Mr. M. Swartout, 3.30 to 4, Abbreviations in Grammar, Mr. H. D. Johnson; 4 to 5, Writing, First and Second Classes, Mr. L. Welch. Evening Session, 7.30 to 10, A debate of the subject: "Resolved, That there should be free instruction for those passing entrance to the High Schools." Messrs. Wood and Dunsmore affirm; Messrs. Johnson and Leitch, deny. Each speech will be followed by music or recitation. *Friday* 9 to 9.30, Report on delegate to Provincial Association, 9.30 to 10, How to teach the Simple Rules of Arithmetic, Mr. J. S. Carson, 10 to 10.30, A paper on the Relation of Teachers to their Profession, Rev. J. M. Clarke, 11 to 11.30, Report of Committee on Promotion, Mr. A. B. Gilbert; 1 to 2, Grammar, Third Class, Mr. A. Toal, 2 to 3, Structure of the British Parliament, Mr. A. Toal; 3 to 4, General business. The roll will be called at the opening and close of each session. A. L. Leitch, President, A. B. Gilbert, Secretary.

WEST BRUCE. The next meeting of the West Bruce Teachers Association will be held in the Central School, Kincardine, on Friday and Saturday, the 14th and 15th inst. The following is the programme. President's address (time 15 minutes); Readings—Misses M. Morrison, R. J. Millar, Tina, Murray and Jessie McLean, Messrs. Freer and Alexander (5 minutes each); Essays—Miss E. Ross, Messrs. J. Glass, D. Thompson, W. J. Huston, Thos. Smith and S. Marshall (15 minutes each); Case, A. A. McKee and T. C. Graham (15 minutes each); Agricultural Education, T. Froule (20 minutes), Infinitives and Participles, H. B. McKay and B. Freer (15 minutes each), Short Methods in Arithmetic, A. H. Smith (30 minutes); How to Secure Regular Attendance, a discussion, led by Neil A. McKinnon (40 minutes); Vulgar Fractions, R. D. Hall and Ewen McKenzie (20 minutes each); Canadian History, R. Johnstone and D. Ross (20 minutes each), Geography, to end of Third Book work, G. W. Ross (40 minutes), Algebra, G. W. Priest and H. McLean (20 minutes each); How to deal with Indolent Pupils, G. W. Ross (40 minutes); School Routine, G. W. Ross (40 minutes); Report of the Delegation to Toronto (15 minutes); Question Drawer, to be answered by a committee (20 minutes). The Library for the Association has been secured, and will be ready for distribution. On Friday evening G. W. Ross, M.P., will deliver a lecture, entitled "Elements of National Power." F. C. Powell, President; Robert Johnstone, Secretary.

DUFFERIN.—The semi-annual meeting of the Dufferin Teachers' Association will be held in the Model School, Orangeville, on Friday and

Saturday, the 14th and 15th inst. Programme—Opening Address, N. Gordon, Esq., P.S.I., Dufferin, Essay on Teaching and Telling, W. J. Allison; Tablet Class, James McClinton; Mathematical Geography, John Tait, Esq., Collingwood Collegiate Institute; Geography to Beginners, Smecon Kelly, "Spell It," D. P. Clapp, Esq., B.A., P.S.I., North Wellington. Arithmetic to Beginners, Miss Lawson; How to Teach English History, John Tait, Esq., Collingwood Collegiate Institute; A Reading, Wm. McKenzie; Analysis and Parsing of "The Deserted Village," as contained in the Fifth Reader, Alex. Steele, Esq., B.A., H. M. Orangeville H. S., Tomc Sol-fa System, J. L. Hughes, Esq., P.S.I., Toronto, Senior Arithmetic, John Tait, Esq., Collingwood Collegiate Institute. Class II, Part I. Reader, Miss C. Fields; Algebra to Beginners, Alex. Steele, Esq., B.A., H. M. Orangeville H. S.; Essay on Elocution, J. T. V. Varcoe; How to Teach Canadian History, J. L. Hughes, Esq., P. S. I., Toronto. Third Class, Reading Lesson, Miss Banks; Drawing, J. L. Hughes, Esq., P. S. I., Toronto. On Friday evening, the 14th inst., J. Laughlin Hughes, Esq., P. S. I., Toronto, will lecture in the Town Hall, on "School-room Humor." F. C. Stewart, Esq., Warden of Dufferin County, has kindly consented to occupy the chair. Doors open at 7.30, Lecture to commence at 8 p.m. N. Gordon, P.S.I., President; F. B. Denton, Secretary.

HALDIMAND.—The semi-annual meeting of the Haldimand Teachers' Association will be held in the Central School, Dunnville, on Friday and Saturday, the 21st and 22nd inst., commencing at 9 o'clock a.m. Programme, *Friday* Reading Minutes of previous meeting; President's Inaugural Address, Miss Dalton, President; The Higher Education of Women, H. E. Kennedy, B.A., Junior Arithmetic, William Ayers; Cleanings, Miss M. J. Davis, School Management, How to Teach the Tablets, G. W. Ross, Esq., M.P.; Literature, its Origin and Benefits, Rev. G. Johnstone. *Saturday* Mistakes in Reading, School Routine, How to deal with Indolent Pupils, G. W. Ross, Esq., M.P.; The English we Use, C. Kemp, B.A.; The Study of Agriculture in Schools, J. A. Murphy, The Relation of Literary Men to Christianity, Rev. J. E. Lancelley. Question Drawer, Answer on School Law, C. Moses, P. S. I.; on Grammar, C. W. Harrison, M.A.; on Discipline, R. G. Cavanagh; Professional Topics. On Friday evening G. W. Ross, Esq., M.P., will deliver his celebrated Lecture, entitled "Intellectual Forces," under the auspices of the Haldimand Teachers' Association. Admission to the Lecture 10 cents. Doors open at half-past Seven. It is hoped that every teacher in the County will be present. A cordial invitation is extended to Trustees and all friends of Education. R. P. Echlin, M.A., President; W. R. Telford, Secretary.

EAST LAMBTON.—The Association met in Forest on Friday and Saturday, the 16th and 17th ult. Mr. Barnes, P. S. Inspector, occupied the chair, and filled it in a very able manner. Mr. A. Macdonald introduced the subject of Canadian History. This led to an animated discussion, the prevailing opinion being that text-books on this subject should be used by the pupils at home, not at school. Mr. D. Mosher showed his method of teaching "First Lessons in Factoring." Mr. White presented an exhaustive report of the proceedings at the Provincial Convention. Mr. D. McAlpine, with the aid of blocks and diagrams, illustrated his method of teaching Reduction. His explanations were clear and concise. G. W. Ross, M.P., conducted a long and most instructive discussion on "Mistakes in Reading." The teachers were thoroughly interested, and cannot fail to teach better as the result of this exercise. On Friday evening Mr. Ross delivered a very thoughtful lecture on "Intellectual Forces." No abstract could do justice to the lecture. On Saturday President Barnes explained fully in detail the method of keeping Registers and making out Annual Reports; and Mr. Ross occupied the remainder of the time in giving practical hints on the method of teaching Reading in Primary Classes.

REVIEWS.

ELEMENTS OF QUATERNION, by A. S. HARDY, PH. D., PROFESSOR OF MATHEMATICS, DARTMOUTH COLLEGE. Ginn, Heath & Co., Boston.—The author of this treatise has shown a thorough mastery of the Quaternion Calculus, and has anticipated and removed many of the difficulties which beset the student of Mathematics, in his endeavor to make use of this elegant and powerful instrument of analytical research. The work possesses more than ordinary merit, and is a credit at once to the author and to the publishers. The explanations are exhaustive, concise and clear, and many examples are given which illustrate admirably the simplicity and brevity of the Quaternion Method. A greater number of examples and problems, with answers and short hints as to their solution, would be appreciated by most students, and especially by those who do not possess the advantages of attendance on lectures, and would we think add to the usefulness of the work. The publishers have sent out the book in a neat form—the paper, type and binding are all that could be desired.