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CANADA SCHOOL JOURNAL HAS RECEIVED

An Honorable Mention at Paris Exhibition, 1876.
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.

HOME LESSONS IN ENGLAND.

The following extract gives a view of the bearings of the new Code on power to exact "home lessons." At the request of a number of parents at Bradford the following case was submitted to counsel for opinion:—

(1) "Whether the School Board duly constituted under the Acts for the borough of Bradford, or any committee of that board, have any legal right under the Acts or the Code of the Governmental Department or the by-laws and regulations of the board to exact 'home lessons' and to dispose of the time of children attending any of the schools of the board out of school hours; and if any such right purports to be conferred by any of the board's by-laws and regulations, whether the by-laws and regulations purporting to confer that right are not 'ultra vires'?"

(2) "Whether any child who may be corporeally or otherwise punished by any officer or teacher of the board for neglecting or refusing to learn or do 'home lessons' has any, and if so, what right of action, criminal or civil, against such officer or teachers, or against the board?"

OPINION.

I. "I am of opinion that there is nothing in any of the Acts of Parliament relating to public elementary education, in the Code of the Governmental Education Department, or in the by-laws and regulations of the School Board for the borough of Bradford made in pursuance of such Acts, which entitles the School Board for the borough of Bradford, or any committee of that board, to exact 'home lessons,' i. e., to dispose of the time of children attending any of the schools of the board out of school hours, without the express or implied authority of the respective parents or guardians of such children respectively: The authority of a parent is only second to that of the State, and unless a court of law has interfered to prevent him exercising such authority or there is some statutory or common law obligation against which the parent exercises his authority it is paramount, and he may dispose of the time and occupation of his child in any manner which in his opinion is best. There is no common law liability of a parent to educate his children. The Education Acts of 1870 and 1876 are the

only ones which create any statutory obligation of a parent to educate his children; and in construing these Acts it must be remembered that they are penal and must be construed strictly. The sections referred to below are the ones which create this liability. By the 74th section of 33 and 34 Vic., c. 75, it is enacted that the School Board may make by-laws *inter alia* (1) requiring parents of children between five to thirteen to attend school (and by a later statute this permissive power is made compulsory); (2) determining the time during which children are to attend.

"It is therefore quite clear that the Education Acts create no duty beyond that of causing children to attend school during school hours, and give no authority to the teachers of schools conducted under the Education Acts to dispose of the time of children out of school hours which they did not possess before these Acts.

"The authority which a teacher derives at common law is one delegated by the parent, and thus standing in *loco parentis* the teacher 'has a portion of the power of the parent committed to his charge—viz., that of restraint or correction as may be necessary to answer the purpose for which he is employed.' The Education Acts having made the attendance of children at school during certain hours practically compulsory, the teacher is by these Acts clothed with such power of the parent as may be necessary for carrying out the purposes of the Act—viz., the education of children during school hours; any further power must be derived from the parent, and if a parent expressly forbids his child to prepare 'home lessons' the implied delegated authority is negated, and the teacher has no power to inflict any punishment for the neglect of such child to prepare such lessons.

"Not only do the Acts not provide for 'home lessons,' but there is a section of the Act of 1876 which negatives the power of teachers to employ the time of children attending school out of school hours. By sections 5 and 6 of 39 and 40 Vic., c. 79, a penalty is imposed upon any person who takes into his employment (except as mentioned in section 9) children of ten or above ten who have not obtained the certificate therein mentioned. Section 9 provides that a person is not to be deemed to have taken any child into his employment contrary to the provisions of the Act if it is proved to the satisfaction of the court (*inter alia*) 'that such employment, by reason of being during school holidays or during the hours during which the school is not open, or otherwise does not interfere with the efficient elementary instruction of such child, and that the child obtains such instruction by regular attendance for full time at a certified efficient school.'

"That a child attending a certified school regularly during school hours may be employed out of school hours, although the certificate of proficiency named in the Act has not been obtained, clearly shows that the Acts do not between school hours interfere with the common law right of a parent to dispose of the time and occupation of his child as he may please.

"If any such right as the one referred to in the case purports to be conferred by any of the board's bye-laws or regulations, such bye-laws and regulations are, for the reasons before stated, *ultra vires*, and consequently void.

2. "From the above it follows that a teacher who punishes a child by corporal or other forcible punishment for neglecting to prepare 'home lessons' by command of his father is acting outside the scope of his authority under the Education Acts, and in direct opposition to the one through whom he must claim any authority not derived from such Acts, and would be

liable to a civil action, or might be summoned before the magistrates and fined for an assault, or in a flagrant case an indictment might be prepared.

"The liability of the School Board, or of the individual members thereof, would entirely depend upon facts which I have not before me."

A JOURNALISTIC JANUS.

"A stranger who would form his opinion of our Public and High Schools from Dr. McLellan's report would conclude that the representations we make of the excellence of our school system are as delusive as was our educational exhibit at the Centennial Exhibition."—*Educational Monthly*, Sept., p. 358.

"It may safely be said that there never was a time in our Canadian annals when interest in educational progress was keener and more universal. Unhappily, while this is the case, it would be difficult to point to a time when our educational affairs would less bear looking into. Neither the machinery nor the system commends itself to favour."—*Ibid.*, p. 361.

These superb sentences remind one of the Irishman who declared that he lit with one of his legs on both sides of the fence,—or of Gower's apostrophe to Janus:—

"Reharse the reason why thou hast such odds,
Of facing both ways more than all the gods."

Applying the editor's own philosophy we might quote his own explanation: "So jaundiced are his views that" . . . eh . . . "he must surely have been out of health when he wrote." But now, free from "the irritations of mud-scow journalism," to which he served a goodly apprenticeship, let us wish him better health and cleaner work. *Bon voyage*, grand captain of the little mud-scow!

CO-EDUCATION OF THE SEXES.

The United States Bureau of Education has, we learn from *Science*, published a circular of information, containing the results of an inquiry into the effects of co-educating the sexes in 340 cities and large towns of the Union. Of these, 321 practise co-education throughout the Public School course, 17 co-educate for part of the course, and 2 separate the sexes entirely. A careful analysis of the reasons adduced for co-education enables the editor to formulate them as follows:—Co-education of the sexes is preferred where practised, because it is (1) *natural*, following the usual structure of the family and society; (2) *customary*, or in harmony with the habits and sentiments of every-day life and law; (3) *impartial*, affording to both sexes equal opportunities for culture; (4) *economical*, using school funds to the best advantage; (5) *convenient*, both to superintendent and teachers in assigning, grading, instruction, and discipline; and (6) *beneficial* to the minds, morals, habits, and development of the pupils. The pamphlet concludes by observing that "both the general instruction of girls and the common employment of women as public-school teachers depend, to a very great degree, on the prevalence of co-education, and that a general discontinuance of it would entail either much increased expense for additional buildings and teachers, or a withdrawal of educational privileges from the future women and mothers of the nation."

It is a remarkable anomaly in our provincial system of Normal School training that the sexes are rigidly separated. Male

students practise teaching with classes composed entirely of boys, and female students with classes of girls. Yet the moment they enter a school of their own they must teach mixed classes. Is it not time to consider whether on the present plan we are preparing them "for the duties of after life"? Is not this arrangement based on an old European prejudice, wholly alien to the spirit of modern education, and especially contradictory of Canadian public opinion and practice? The one or two schools in which co-education is not adopted will on examination give very little support to the system of separation.

SCHOOL LIBRARIES.

A time there was when almost every school section in the older parts of this Province had a fairly good library. In most towns there is now a library in connection with the Mechanics' Institute; but in many places these libraries are rather poor affairs. Not one of them contains many of the books needed by a progressive teacher. Every Public School should have a gradually increasing stock of books, especially of these two kinds: (a) Those suitable for boys and girls; (b) Professional and reference books for the teachers. A very small amount of enterprise and self-help would give every teacher command of some of the more expensive books, which are seldom found on his private shelves. By way of encouragement we mention a case within our own knowledge of a teacher who went to a small town where no library existed. In eighteen months this teacher left over two hundred and fifty dollars worth of rare and well chosen books behind him in the school. Where there is a will the way will soon open up. The public only needs to see a little enthusiasm to join in heartily with a live teacher. Every school should begin to make its own collection of good books. However small the beginning, it should be made, and pupils and parents should be earnestly encouraged to assist in the good work. If a whole township would unite—what would follow?

At Leipsic, Germany, the library of the Comenius Institution loans books to teachers and educational writers. The free use of books is given to residents of Leipsic for four weeks. The library is open on Wednesdays and Saturdays from 2 to 4 p.m., but closed during the vacations of the Leipsic schools. For the protection of the library, applicants who are not personally known to the librarians have to make use of references. Orders sent by postal-card are honored after receiving an official stamp. The expense of transportation is borne by the reader.

PANICS AGAIN.

We have repeatedly warned teachers and school trustees to be on their guard against panics in large schools. One day last month such a disaster very nearly happened in the Wellesley street school in this city. On the 15th ult. six hundred children rushed headlong down-stairs in the school at Waterbury, Connecticut. Many were badly trampled, some received broken bones and internal injuries. The strictest military discipline should be enforced in marching in or out. A drum or a piano to mark the time is an immense advantage.

MODEL SCHOOL INSPECTION.

We have frequently received complaints from Inspectors in past years respecting the way in which the work was divided among them after the Government decided not to appoint a special officer for that duty. The arrangements for the present year are likely to give satisfaction. The efficiency of Inspector Carlyle in his official visits to the Model Schools in the vicinity of this city is favorably commented upon. Dr. McDermaid and Inspector Brown are also impressing masters and students by their energy and practical skill. The bulk of the work will, for the present year at least, be undertaken by G. W. Ross, LL.B., whose popularity and general acceptance have always made his visits red-letter days in the school calendar. His broad sympathy with teachers and students, his wide experience, and intensely practical turn secure valuable results at schools and conventions alike.

A SERIOUS CHARGE.

In the *Globe* of October 5th we find a rather extravagant article on "Reading Aloud." The writer says:—

"Anything more sluggish, humdrum, monotonous, and unintelligent than the average reading aloud in this Canada of ours . . . could not well be imagined, and no wonder."

He then proceeds to make teachers wholly responsible for the exaggerated case he has conjured up in his own imagination. To show how very little this great oracle knows of the schools of Ontario as they stand to-day, take these sentences:—

"If the pupils stumble through in any fashion with the 'single redeeming feature of not very abominably mispronouncing any of the words it is often all that is either expected or asked for; while these scholars get but few indications of what might be called good reading, for the simple yet all-sufficient reason that the teachers are themselves anything but adepts in the exercise. We venture to affirm that there are hundreds—we shall not say thousands—of our teachers who never once showed their pupils how a sentence ought to be read with propriety and effect. The lesson is 'heard,' and each scholar is allowed to stagger through as he best may, too often in a helpless, limping monotone that has 'neither force, vitality, nor intelligence about it.'"

"We venture to affirm" that nearly the whole of this sweeping indictment against the teachers is false so far as concerns the Province of Ontario. We challenge the *Globe* to produce one hundred teachers in the whole Province "who never once showed their pupils, etc." Bah! "we venture to affirm" that this wiseacre has not spent two hours inside a Public School since 1870, and knows nothing of the way in which reading is actually taught. He has evidently no conception of the silent revolution in methods which the County Model Schools are effecting. He describes a style of teaching which was, perhaps, common a quarter of a century ago, when he himself was a boy.

There are many reasons to give for the prevalence of inferior reading, as:—(a) The small value attached to it at the departmental examinations and at the various university ex-

aminations. (b) The extensive requirements in other subjects to which these public examinations attach a three times greater value. (c) The difficulty and unsuitable character of the Readers that have been used for the last fifteen years. We should delight to hear this wise editor "reading aloud with any measure of intelligence and propriety" any one of a hundred lessons we could select from the Third or the Fourth Books of the series just abolished. (d) Natural inaptitude of children, lack of voice and ear. Not more than half a dozen in an average hundred pupils could ever become finished readers, simply for the same reason that nine music pupils out of every ten never could be trained to play or sing with power and expression. (e) Natural inaptitude for the same reasons of many teachers, e. g. We remember a highly accomplished scholar who was also a most successful teacher who could not vary his voice more than two tones, and an honored and useful pastor who never could perceive the distinction between *aye* and *hay*. (f) Bad methods and in some few cases "hearing" instead of teaching. This latter certainly bears a very small proportion compared with several of the preceding, as (a), (b) or (c), and it is only by ignorantly distorting the actual facts that these remarkable affirmations in the *Globe* could ever be made.

We add one more reason which will probably stun the aforesaid editor: (g) Over-teaching, too much time spent in explanation and in model reading, and too little time given to "hearing" and drilling the pupils.

THE SCIENCE OF EDUCATION.

At a meeting of the College of Preceptors at London J. J. Beuzemaker, B.A., ably discussed the present and the future of the science of education. He summed up the parts of the science most essential and of most practical use to the teacher as follows:—

(a) **PSYCHOLOGY**, as related to education, including the laws of Association and their relation to Memory, Reason, and Imagination; the development and the character of the Feelings and the Emotions; and the interdependence of Mind and Body as exemplified in Volition.

(b) **ETHICS**—The ethical problems and their special application to the formation of the character of the young.

In these two branches he would exclude all questions relating to Metaphysics and Ontology, such as Nominalism and Realism, Idealism, the nature of Being and of a First Cause, etc.

(c) **PHYSIOLOGY AND HYGIENICS**—A fair knowledge from a good hand-book, giving special attention to the fundamental truths on ventilation, light, air, soil, exercise, and food.

(d) **THE HISTORY OF EDUCATION**, which is not at present easily accessible in a compact form. He demands a subdivision of this subject into: (1) A history of all the subjects taught in an ordinary school curriculum. We want the history of Reading, Writing, Arithmetic, Geography, Latin, etc. (2) Schools and their organizations. (3) Biographies of the great practical educational reformers, like Comenius, Wolf, Sturm,

Ratke, Basedow, Campe, Salzmänn, Pestalozzi, Jacotot, Bell Lancaster, Rosseau, Locke, etc.

We venture to suggest Hopkins' *Outline Study of Man* as the most simple introduction to psychology we have seen. Its popular style, clear arrangement, and thoroughly elementary character supply an excellent introduction to the science for those who wish to make a beginning. We also hazard another suggestion, that the biographies of educational reformers and practical illustrations of methods with classes of pupils might very profitably form a leading feature of the work at our Teachers' Conventions. With less crowded programmes more time could be given to really practical work of this kind.

The American edition of McLellan's Algebra will shortly be issued, under the editorial care of one of the most popular mathematical writers of school text-books. It is satisfactory to see our cousins adopting the works of a Canadian scholar. Less comfortable, however, is the reflection that they have borrowed several of our distinguished thinkers, and may do so again. They are welcome to our books, but we cannot lend them any more men.

Ten years after its general adoption in Ontario, the Unitary Method is being insisted on by the educational authorities of England as compulsory. The English move slowly however, for we observe that in everyone of our best English exchanges, and even in special mathematical publications, the solutions of problems in percentage, interest, discount, etc., are all clumsily wrought out by proportion.

MINISTER vs. SUPERINTENDENT.

We notice that many conventions are discussing this question, but as yet it is impossible to give any decision as to the direction of professional opinion. It will do no harm to have the various advantages and disadvantages of each system thoroughly ventilated. Perhaps in this way some amendments may be suggested of great practical value. Surely some good will accrue by concentrating so much experience and thought on a single question. If no other benefit follows the teachers themselves will derive profit from the debate, especially if it is spirited and well conducted. Stagnation is death; better have Thor with sledge-hammer and thunder, than hold our conversations in the sleepy atmosphere of weary common-place where it is always afternoon. Even a little educational heresy is preferable to droning orthodoxy, dumb aimlessness, and snoring vacuity.

CURRENT OPINION.

A speaker at one of the Chautauqua gatherings suggested that the study of literature begin in the third year of the school course and be systematically pursued. It might be as follows: "Let the third be the Whittier year; the fourth, Longfellow; the fifth, Irving and Bryant; the sixth, Tennyson and Dickens; the seventh, historical; the eighth, patriotic; while in the High School, the earlier English writers, with Milton and Shakespeare." He would have the course pursued under a syllabus prepared by the superintendent and school board, and examinations regularly given. Worthy of thought.—*Journal of Education*.

A committee of the St. Louis School Board has recommended that the principle which underlies the Kindergarten system be extended to all the primary schools of that city with a view to eventually modifying the whole plan of public instruction. St. Louis has had a more extensive experience of the Kindergarten system than any other city in America, and this practical testimony to its value will go far towards inducing other localities to take it up in earnest. The experiment is now in progress in Toronto, and if it succeeds, as we have no doubt it will do, this city will be in the vanguard of the movement to afford what the St. Louis *Globe-Democrat* calls "a real science" of teaching a foothold against educational dogma.—*Globe*.

No one can be more averse to what has been well called "hot-house education" than ourselves; but, at the same time, no one can be more alive to the fact that home lessons are virtually a *sine qua non* to good results from school work. Of course, there must be a limit to work done out of school hours, just as there must be to the regular school work; but in all good foundations, and in all classes of life, the former is, and always should be, supplemented by the latter. "Reasonable home lessons" only are advocated by the department, and it is quite clear that admission cannot be refused to any child whose parents refuse to allow him to do a really reasonable amount of home work.—*Educational Times*.

The subject of railroad geography does not receive the attention it deserves in schools. After the physical and the ordinary geography of our country is known, there should be a thorough training, from the railroad maps that can be easily procured at any general ticket office on the great routes of railway, steamship, canal, and coastwise travel. American civilization is now deepening all its channels along these great routes of intercourse. The leading commercial towns, even the educational centres, are found on these lines; and a school boy ignorant of this feature of American progress is all afloat in his practical estimate of home geography.—*Journal of Education*.

It is not so much overwork that is killing us as under exercise. The fatal routine of the ordinary minister's (and teacher's) life, and its lack of novelty and stimulus, lull his activities into benumbing sleep. No, it is not work that hurts; for we can work as long as the day lasts, if indigestion and rheumatism, the two enemies of all Americans, will only let us alone. To be teased and fretted by pain, to be compelled to write when the neuralgia has twisted your brain out of shape or taken it away altogether—well, under such circumstances, life becomes a heavy burden. In nine cases out of ten it is nothing more than a disgruntled muscle or nerve that stands in your way.—*Dr. G. H. Hepworth, in Independent*.

VENTILATION.—On this subject Dr. Russell, in *The Glasgow Health Lectures*, pertinently says: "Minimize as we may the progressive contamination of an inclosed inhabited space, the contamination is still progressive, and, without renewal of the air, in a few hours you will reach the boundary beyond which lies impaired health. All through the day, remember to have a small chink open at the tops of your windows; or, better still, raise the lower sash, close the opening beneath with a piece of wood fitting closely, and so the air will enter at the junction of the sashes, and pass upward without draught. The secret of ventilation without draught is a *little and constantly*. The mere fact of living in a close atmosphere begets a shivery, susceptible condition of the body, which is intolerant of the slightest sensation of chill. If you accustom yourself and your children to fresh air, you become robust, your lungs play freely, the vital heat is sustained, and even a draught becomes exhilarating."

Mathematical Department.

TORONTO UNIVERSITY EXAMINATIONS, 1883.

FIRST EXAMINATION.

EUCLID AND TRIGONOMETRY.

Examiner—EDGAR FRISBY, M.A.

1. If a straight line be bisected, and produced to any point, the square on the whole line thus produced, and the square on the part of it produced, are together double of the square on half the line bisected, and of the square on the line made up of the half and the part produced.

2. In every triangle, the square on the side subtending an acute angle is less than the squares on the sides containing that angle by twice the rectangle contained by either of these sides, and the straight line intercepted between the perpendicular let fall on it from the opposite angle, and the acute angle.

In any quadrilateral, the squares on the diagonals are together equal to twice the sum of the squares on the straight lines joining the middle points of opposite sides.

3. The angles in the same segment of a circle are equal to one another.

Given the base AB , and vertical angle C , any line drawn dividing this angle in a given ratio will pass through a fixed point.

4. Describe an isosceles triangle having each of the angles at the base double of the third angle.

Are either of the two circles essential to this proposition?

5. If a straight line be drawn parallel to one of the sides of a triangle, it shall cut the other sides or those sides produced proportionately.

If a straight line be drawn parallel to the base of a triangle cutting off the n^{th} part of the sides; and diagonals of the remaining rhomboid are drawn, they will mutually cut off the $(n+1)^{\text{th}}$ part of these diagonals.

6. Similar triangles are to each other in the duplicate ratio of their homologous sides.

Divide a triangle into two equal parts by a straight line perpendicular to the base.

7. If from the vertical angle of a triangle a straight line be drawn perpendicular to the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the perpendicular and the diameter of the circle described about the triangle.

8. Prove $7 \log \frac{16}{15} + 5 \log \frac{25}{24} + 3 \log \frac{81}{80} = \log 2$.

9. The angles of a triangle are in the ratio 1:2:3 and the sum of the sides is 400 feet; find the sides.

10. The vertical angle of an isosceles triangle is 30° , and one of its equal sides is $20\sqrt{3}$ feet, find the area and the length of the perpendicular on the base.

11. The three sides of a triangle are 20, 21, and 29 feet, find the area, and the perpendicular from the opposite angle upon the longest side.

12. ABC is a triangle, and CD is drawn perpendicular to the base, show that the segments of the base are equal to

$$\frac{c^2 + a^2 - b^2}{2c} \text{ and } \frac{c^2 - a^2 + b^2}{2c}$$

SOLUTIONS.

1. Book-work. Euclid, Book II., 9.

2. (a) Book-work. Euclid, Book II., 13.

(b) Let $ABOD$ be the given trapezium. Let X be the middle pt. of AB , Y of BC , Z of CD , and W of DA . Join DB, AC, WY, XZ ; also WX, YZ, WZ, XY . Then $WXYZ$ is a parallelogram. For $WX, YZ, \&c.$, join the middle points of the sides of the triangles $DAB, ABC, \&c.$ Then since $WX, YZ, \&c.$, is a parallelogram, the sum of the squares on WX, XY, YZ, ZW is = the sum of the squares on WY and XZ . And doubles of these are equal. But twice the squares on WX and ZY = 4 times the square on WX = once the square on DB . Similarly for the rest. Hence $AC^2 + DB^2$ = twice $(WY^2 + XZ^2)$.

3. (a) Book-work. Book III., 21.

(b) Let AB be the given base and $C, C_1, C_2, \&c.$, be the given vertical angle in different positions. Now the locus of these positions is the arc of a circle which passes through A and B . Let this

circle be described, and let the line CP divide the angle C in any ratio and meet the circumference again at P . Join C and P . Then the angle PCB = angle PCB . Hence C_1 is divided in the same ratio as C . Similarly for $C_2, C_3, \&c.$ Hence it is clear that all the lines pass through P .

4. (a) Book-work. Book IV., 10.

(b) The first and larger circle is not necessary, for we may use I. 22 to describe the triangle ABD .

5. (a) Book-work. Book VI., 2.

(b) Let ABF be the triangle. In AB let C be taken so that $\Delta B = n.AC$. Draw CE parallel to BF , join CF and BE , cutting each other in Q . Through Q draw DQG parallel to AF . Then $BD.DA = BQ.QE$ or $FQ.QC$. It may also be shown that $AB:AC = BD:DA$. But $AB = n.AC$, $\therefore BD = n.DA$. Consequently $AB = (n+1)AD$, and therefore $BE = (n+1)QE$.

6. (a) Book-work. VI., 19.

(b) If the triangle is isosceles the perpendicular from the vertex will bisect the triangle. But if not, bisect AB in E , draw EF perp. to BC . Take BG a mean proportional between BF and BC , draw GH parallel to FE , then GH bisects the triangle.

For $\Delta BEF:BGH = BF:BC$. (Similar triangles & VI. 19.)

$$\begin{aligned} &= \Delta BEF:BEC. \\ \therefore \Delta BGH &= \Delta BEC. \\ &= \frac{1}{2} \Delta BAC. = HACG. \end{aligned}$$

7. Book-work. See VI. C.

$$8. \quad 7 \log \frac{2^8}{3 \times 10} + 5 \log \frac{100}{2^5 \times 3} + 3 \log \frac{3^4}{2^3 \times 10}$$

$$= 7(5 \log 2 - \log 3 - 1) + 5(2 - 5 \log 2 - \log 3) + 3(4 \log 3 - 3 \log 2 - 1) = \log 2.$$

9. $A:B:C = 1:2:3$; but $A+B+C = 180^\circ$.

$$\therefore A = 30^\circ, B = 60^\circ, C = 90^\circ;$$

$$\therefore \sin A = \frac{1}{2}, \sin B = \frac{1}{2}\sqrt{3}, \sin C = 1.$$

$$\text{Also } \frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}.$$

$$\therefore \frac{1}{2a} = \frac{\sqrt{3}}{2b} = \frac{1}{c}$$

and $a+b+c = 400$, three equations which give a, b , and c .

10. Base angles must = 60° . Let p = perp.

$$\text{Then } \sin 60^\circ = \frac{p}{20\sqrt{3}} = \frac{1}{2}\sqrt{3}, \therefore p = 30.$$

$$\text{Let } b = \text{base, then } 30^\circ + \frac{1}{2}b^2 = 400 \times 9, \therefore b = 60\sqrt{3};$$

$$\text{and area} = \frac{1}{2}bp = 900\sqrt{3}.$$

11. Area = $\sqrt{(50 \times 49 \times 41)}$.

$$\text{Area} = \frac{1}{2}p \times 29 = \sqrt{(50 \times 49 \times 41)}, \therefore p = \&c.$$

12. Let BC be the base and p the perp. from A .

Let x = one segment, and

$$\therefore a - x = \text{other segment.}$$

$$\therefore c^2 - x^2 = b^2 - (a-x)^2 = p^2,$$

$$\therefore x = \&c.$$

ALGEBRA AND TRIGONOMETRY.

Examiner—W. FITZGERALD, M.A.

1. (1) Given $\left\{ \begin{matrix} x:y::a:b \\ x^2+y^2=c^2 \end{matrix} \right\}$ find the values of x and y .

(2) Given $\left\{ \begin{matrix} 2x+4y-3z=22 \\ 4x-2y+5z=18 \\ 6x+3y-2z=31 \end{matrix} \right\}$ find the values of x, y , and z .

2. Solve the following equations:

$$(1) \left\{ \begin{matrix} x^2+y^2=41 \\ xy=20 \end{matrix} \right\}$$

$$(2) x^4 - 4x^2 + 6x^2 - 4x = 15 = 0$$

$$(3) \left\{ \begin{matrix} x^2 + xy + y^2 = 7 \\ x^4 + x^2y^2 + y^4 = 21 \end{matrix} \right\}$$

3. Define an arithmetical and a geometrical series.

(1) Find the n^{th} term, and the sum of n terms of an arithmetical series.

(2) Insert five arithmetical means between 3 and 16.

4. In a geometrical series, if the ratio be a proper fraction, show that the sum of the series when the number of terms is increased indefinitely has a limiting value.

The limit of the sum of a geometrical series is $3\frac{1}{2}$, and the second term is $-\frac{5}{2}$; find the series.

5. Find three numbers in geometrical progression such that their sum shall be 21, and the sum of their squares 189.

6. Define the trigonometrical ratios of an angle less than 90°, and prove:

(1) $\sin^2 A + \cos^2 A = 1$
 (2) $\sin A \cos A = \frac{1}{\tan A + \cot A}$

7. Prove the following formulæ:

(1) $\sin A - \sin B = \sin A \cos B - \cos A \sin B$.
 (2) $\tan \frac{1}{2} A = \frac{1 - \cos A}{\sin A}$

8. In any triangle establish the following relations:

(1) $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$
 (2) $\cos A = \frac{b^2 + c^2 - a^2}{2bc}$

(3) Area = $\sqrt{s(s-a)(s-b)(s-c)}$

9. Having given two sides and the included angle of a triangle, obtain formulæ from which to find the other two angles and the third side.

10. Discuss the ambiguous case in the solution of triangles.

11. Find the sine and cosine of 45° and 30°, and deduce those of 75° and 15°.

SOLUTIONS.

1. (1) $\frac{x^2}{y^2} = \frac{a^2}{b^2} \therefore \frac{x^2}{x^2 + y^2} = \frac{a^2}{a^2 + b^2} = \frac{x^2}{c^2} \therefore x = \pm \frac{ac}{\sqrt{a^2 + b^2}} \&c.$

(2) $A = 2 \quad 4 - 3 = 22 = 0$
 $B = 4 - 2 \quad 5 - 18 = 0$
 $C = 6 \quad 3 - 2 = 31 = 0$

$A + B + C \quad 12 \quad 5 \quad 0 = 71 = 0 = D$

$3C - 2A = 14 \quad 1 \quad 0 = 49 = 0 = E$

$5E - D \quad 58 \quad 0 \quad 0 = 174 = 0$

or $58x - 174 = 0 \quad x = 3, y = 7, z = 4.$

See McLellan's *Handbook*, page 178.

2. (1) Multiply 2nd by 2; add and subtract; take square roots and $x + y = \pm 9, x - y = \pm 1, \therefore x = \pm 5$ or $y = \pm 4.$

(2) $1 + 6 - 15 = -4 - 4 \therefore x + 1$ is a factor.

See McLellan's *Handbook*, page 42, § 16.

$$\begin{array}{r} 1-4+6-4-15 \\ -1 \quad -1+5-11+15 \\ \hline 1-5+11-15 \\ +3 \quad +3-6+15 \\ \hline 1-2+5 \end{array}$$

Now the roots of $x^2 - 2x + 5 = 0$, are $1 \pm 2\sqrt{-1}$, which with -1 and 3 are all the roots of the $=n$.

(3) $2nd \div 1st = x^2 - xy + y^2 = 3$. Combine with $1st$ and $xy = 2$, \therefore from $1st$ $x + y = \pm 3$, and from $2nd$ $x - y = \pm 1, \therefore \&c.$

3. Book-work. (1) do.

(2) $a = 3$ and $a + 6d = 16, \therefore d = \frac{1}{3}$, and the series is $3, 5\frac{1}{3}, 7\frac{2}{3}, 9\frac{1}{3}, 11\frac{2}{3}, 13\frac{1}{3}, 16.$

4. (1) Book-work.

(2) $\frac{a}{1-r} = 3\frac{1}{2}$, and $ar = -\frac{5}{2}, \therefore r = \frac{3}{2}$ or $-\frac{1}{2}$.

Now the latter value only will apply, $\therefore r < 1, \therefore a = 5$, and the series is $5 - \frac{5}{2} + \frac{5}{4} - \frac{5}{8} + \&c.$

5. $a + ar + ar^2 = 21$, and $a^2 + a^2 r^2 + a^2 r^4 = 189$.

Dividing, $a - ar + ar^2 = 9, \therefore$ from $1st$ $ar = 6$, or $a = \frac{6}{r}$

Substituting $\frac{6}{r} + 6 + 6r = 21$, i.e. $6r^2 - 15r + 6 = 0$,

Or $(2r - 1)(r - 2) = 0, \therefore r = \frac{1}{2}$ or 2 , and $a = 12$ or 3 .

Hence the numbers are 12, 6, 3, or 3, 6, 12.

6. (1) Book-work.

(2) $\frac{1}{\tan A + \cot A} = \frac{1}{\frac{\sin A}{\cos A} + \frac{\cos A}{\sin A}} \&c.$

7. (1) Book-work.

(2) $\tan \frac{1}{2} A = \frac{\sin \frac{1}{2} A}{\cos \frac{1}{2} A} = \frac{1 - \cos A}{\sin A}$.

8, 9, 10, 11. Book-work

ALGEBRA AND TRIGONOMETRY.

HONORS.

Examiner—W. FITZGERALD, M.A.

1. Solve,

(1) $\begin{cases} x^2 + xy = 65 \\ y^2 - xy = 24 \end{cases}$

(2) $\begin{cases} x^2 + y^2 + (x+y)xy = 13 \\ \frac{x^2 y^2}{x+y} = 36 \end{cases}$

2. Find the number of variations of n different letters taken r together; also the number of such variations, when each may enter 1, 2, 3, &c., or r times in each variation.

If the number of variations of $a+b$ things taken two together be 56, and of $a-b$ things 12, find the number of combinations of a things, taken b together.

3. State the Binomial Theorem, and prove it when the index is a positive integer.

Expand to five terms, $(a - 3x)^{-\frac{1}{2}}$

4. Find the present value of an annuity A for n years at compound interest.

The reversion of a freehold estate worth P pounds per annum to commence a years hence is to be sold. Ascertain its present value at r per cent. per annum compound interest.

5. Define a continued fraction; and illustrate the method of converting a quadratic surd to a continued fraction.

Express as continued fractions

(1) $\sqrt{17}$; (2) $\sqrt{13}$; (3) $\sqrt{17}$.

6. What is a recurring series?

Explain what is meant by the scale of relation of a recurring series.

Sum to n terms, and *ad infinitum* the series

$\frac{1}{1 \cdot 2 \cdot 3} + \frac{1}{2 \cdot 3 \cdot 4} + \frac{1}{3 \cdot 4 \cdot 5} + \&c.$

7. Find the radii of the inscribed and escribed circles of a triangle in terms of the sides and angles.

8. In any triangle prove:

(1) $\frac{\sin(B-C)}{\sin(C-A)} = \frac{(b^2 - c^2) \sin B}{(c^2 - a^2) \sin A}$

(2) Area = $\frac{1}{2}(b^2 + c^2) \frac{a \sin B \sin C}{b \sin B + c \sin C}$.

9. Show how to expand a^x in a series of ascending powers of x .

10. State De Moivre's Theorem, and assuming its truth prove,

(1) $\cos a = 1 - \frac{a^2}{1 \cdot 2} + \frac{a^4}{1 \cdot 2 \cdot 3 \cdot 4} \dots \&c.$

(2) $\sin a = a - \frac{a^3}{1 \cdot 2 \cdot 3} + \&c. \dots$

11. Sum to n terms:

$\sin \theta - \sin(\theta + a) + \sin(\theta + 2a) \dots$

and deduce the sum of n terms of the series, $\cos \theta - \cos 2\theta + \cos 3\theta \dots \&c.$

SOLUTIONS.

1. (1) Put $y = vx$, and we have $x^2 + vx^2 = 65$, and $v^2 x^2 - vx^2 = 24$. Divide these equals and cancel and $(1+v) + (v^2 - v) = \frac{65}{24}$.

Whence $65v^2 - 89v - 24 = 0$, and $v = \frac{3}{2}$, or $-\frac{1}{2}$, Whence x and $y = \&c.$

(2) (By W. N. Watson, Senforth.)

Transform first equation into $(x^2 + y^2)(x + y) = 13$ and multiply by second and we have $(x^2 + y^2)x^2 y^2 = 13 \times 2^2 \times 3^2$. Now, looking at the form of each side we see that they correspond and that $x^2 + y^2 = 13, x^2 = 2^2$, and $y^2 = 3^2$ will satisfy the equation. Whence $x = \pm 2, y = \mp 3$. Then by dividing down the equation with these values we get a quadratic which will give the other two values of x and of y .

2. (a) $V_n = n(n-1)(n-2) \dots (n-r+1)$.

(b) Let a be placed before each of the n things $a, b, c, d, \&c.$, thus forming n variations. Similarly for $b, c, d, \&c.$, each of the rest. Thus there will be formed n sets with n variations in each set when letter enters twice in each variation, i.e. $n \times n$ or n^2 variations altogether. Again place a before each of these n^2 variations, and form n^2 variations 3 and 3 together. Place $b, c, d, \&c., \&c.$ The whole number of variations is n^r .

(c) We have $(a+b)(a+b-1)=56$
 $(a-b)(a-b-1)=12$, or
 $(a+b)^2 - (a+b) - 56 = 0$, and
 $(a-b)^2 - (a-b) - 12 = 0$.

Whence $a+b=8$, and $a-b=4$, and $a=6$, $b=2$.

Number of combinations $= \frac{6 \cdot 5}{1 \cdot 2} = 15$.

8. Book-work.

$$(a-3x)^{-\frac{1}{2}} = a^{-\frac{1}{2}} \left(1 - \frac{3x}{a}\right)^{-\frac{1}{2}}$$

$$= a^{-\frac{1}{2}} \left\{ 1 + \frac{1}{2} \left(\frac{3x}{a}\right) + \frac{1 \cdot 3}{1 \cdot 2 \cdot 4} \left(\frac{3x}{a}\right)^2 + \frac{1 \cdot 3 \cdot 5}{1 \cdot 2 \cdot 3 \cdot 8} \left(\frac{3x}{a}\right)^3 + \frac{1 \cdot 3 \cdot 5 \cdot 7}{1 \cdot 2 \cdot 3 \cdot 4 \cdot 16} \left(\frac{3x}{a}\right)^4 + \&c. \right\} \text{ etc., etc.}$$

4. (1) Let R = rate per cent. and $M = (1+r)$ also V = pres. value.

$$\text{Then } VM^n = A \cdot \frac{M^n - 1}{M - 1} = \frac{A}{r} (M^n - 1)$$

$$\therefore V = \frac{A}{r} (1 - M^{-n}) = \frac{A}{r} \left(1 - \frac{1}{(1+r)^n}\right)$$

(2) In the case of rent of an estate n becomes $\infty \therefore V = \frac{A}{r}$

But if the rent does not begin for a years we must subtract from this the value of the annuity for a years, i.e. the value of the reversion is

$$= \frac{P}{r} - \frac{P}{r} \left(1 - \frac{1}{(1+r)^a}\right) = \frac{P}{r} \cdot \frac{1}{(1+r)^a}$$

$$5. \sqrt{11} = 3 + (\sqrt{11} - 3) = 3 + \frac{2}{\sqrt{11} + 3} = 3 + \frac{1}{\frac{\sqrt{11} + 3}{2}}$$

$$\frac{\sqrt{11} + 3}{2} = 3 + \frac{\sqrt{11} - 3}{2} = 3 + \frac{2}{2(\sqrt{11} + 8)} = 3 + \frac{1}{\sqrt{11} + 8} \&c.$$

$$\therefore \sqrt{11} = 3 + \frac{1}{3 + \frac{1}{6 + \frac{1}{3 + \frac{1}{6}}}} \&c. \text{ Similarly}$$

$$\sqrt{13} = 3 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{6 + \frac{1}{6}}}}} \&c.$$

$$\sqrt{17} = 4 + \frac{1}{8 + \frac{1}{8 + \frac{1}{8 + \frac{1}{8}}}} \&c.$$

6. Book-work.

(1) The n^{th} term $= \frac{1}{n(n+1)(n+3)}$. To determine whether

the terms of the series can each be separated into two parts, assume $\frac{1}{n(n+1)(n+2)} = \frac{A}{n(n+1)} + \frac{B}{(n+1)(n+2)} = \frac{n(A+B) + 2A}{n(n+1)(n+2)}$

$$\therefore A+B=0 \text{ and } 2A=1 \text{ or } A=\frac{1}{2}, B=-\frac{1}{2}$$

Whence the series becomes

$$S = \frac{1}{2} \left\{ \frac{1}{1 \cdot 2} + \frac{1}{2 \cdot 3} + \frac{1}{3 \cdot 4} + \&c. + \frac{1}{n(n+1)} \right\} - \frac{1}{2} \left\{ \frac{1}{2 \cdot 3} + \frac{1}{3 \cdot 4} + \&c. + \frac{1}{n(n+1)} + \frac{1}{(n+1)(n+2)} \right\}$$

$$\text{or } S = \frac{1}{2} - \frac{1}{2} \cdot \frac{1}{(n+1)(n+2)} = \frac{n(n+3)}{4(n+1)(n+2)}, \text{ and } \frac{1}{2} \text{ when } n = \infty$$

7. Book-work.

8. (1) $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$, whence by symmetry

$$\frac{\sin^2 C - \sin^2 A}{\sin^2 C - \sin^2 A} = \frac{b^2 - c^2}{c^2 - a^2} = \frac{\sin(B+C)\sin(B-C)}{\sin(C+A)\sin(C-A)}$$

$$\therefore \frac{\sin(B-C)}{\sin(C-A)} = \frac{b^2 - c^2}{c^2 - a^2} = \frac{\sin(C+A)\sin(B-C)}{(c^2 - a^2)\sin A}$$

(2) If $\text{area} = \frac{1}{2}(b^2 + c^2) \frac{a \sin B \sin C}{b \sin B + c \sin C}$;

substitute $\frac{c}{b} \sin B$ for $\sin C$ and we get

$$\text{area} = \frac{\frac{1}{2}(b^2 + c^2) a \sin^2 B}{(b^2 + c^2) \sin B} = \frac{1}{2} a c \sin B, \text{ which is true.}$$

9. Exponential theorem. Book-work.

10. Book-work.

$$\sin \left\{ \theta + \frac{(n-1)(a+\pi)}{2} \right\} \sin \frac{n(a+\pi)}{2}$$

11. (1) Required sum $= \frac{\sin \frac{a+\pi}{2}}{\sin \frac{a+\pi}{2}}$

(2) Sum $= \frac{\cos \left\{ \theta + \frac{(n-1)(\theta+\pi)}{2} \right\} \sin \frac{n(\theta+\pi)}{2}}{\sin \frac{\theta+\pi}{2}}$

See Todhunter's Trigonometry, § 306.

Correspondence.

HOW THE SALE OF SCHOOL BOOKS IS PROMOTED.

To the Editor of the CANADA SCHOOL JOURNAL.

SIR,—I have received the following extraordinary communication from Mr. S. G. Beatty, the manager of the Canada Publishing Company, and knowing that this firm has been in the habit of using its organ, the *Canada Educational Monthly*, for the purpose of attacking school officials for the furtherance of its own interests, and deeming it probable that other communications of a similar character have been sent to school inspectors with the object of intimidating them in order to promote the adoption of the Royal and the Royal Canadian Readers, I therefore thought it best for the good of education in this Province to forward the letter for publication.

Copies of the same letter have been placed by me in the hands of the Hon. A. S. Hardy, Acting Minister of Education, and of Alexander Marling, Esq., Secretary of the Education Department.

A programme of our Teachers' Association, which meets on the 4th and 5th instants, was transmitted by me a few days before the receipt of the manager's favor to the office of the *Canada Educational Monthly*, and I have no doubt that it was intended by Mr. Beatty and by the "Public School editor" (Mr. David Boyle, of Elora, who is an agent of this firm or firms) to make an effort to carry our convention. "The Public School editor" failed last year in this division of Wellington in obtaining a favorable verdict for his Readers.

I leave the public to draw their own conclusions.

Yours, etc.,

DAVID P. CLAPP.

Harriston, Oct. 2.

CANADA PUBLISHING COMPANY (Limited),
 32 and 34 Front street,
 TORONTO, Sept. 20th, 1883.

D. P. Clapp, Esq., B.A., Harriston:

DEAR FRIEND,—Information re *cribbing*, Provincial Teachers' and University Examination papers, showing manner in which certificates and degrees were obtained, etc., has been furnished the *Educational Monthly* for publication, with your name brought prominently forward. On account of our former friendly relationship, I prevailed upon them to defer printing the article in this month's issue, feeling that even were everything related not true, it might do a man in your position irrevocable injury.

I interceded for you in this same connection once before, and although being now repaid by *your doing everything you can against my interests*, I deemed it only fair, as the matter came under my notice, to do what I could to stay publication until you at least know something of the purport of the article. I have thus done what I would expect an old acquaintance to do for me in such a case, and would advise you, if you do not wish the affair published, to communicate with the "Public School Editor" of *The Canada Educational Monthly*.

Yours truly,

S. G. BEATTY.

[The preceding correspondence reveals a small part of the desperate tactics to which the Canadian agents of Nelson's Royal Readers have resorted. In order to foist their foreign books upon our schools they deliberately attempt to terrorize over a Public School Inspector by pretending that they hold damaging infor-

mation against him which they will publish in their little mud-scow-monthly unless he withdraws his opposition to their School Readers. O Impudence, thy name is _____ Co. (Limited) |—EDROR.]

NORTHPORT, MICH., Oct. 8th, 1883.

To the Editor of the Canada School Journal :

Permit me to say a word in answer to a few statements found in your paper of September. It was stated by a member of the Ontario Teachers' Association that the average daily percentage of attendance of pupils in the United States was higher than in Ontario. This is true from various reasons. 1st. Because the school terms are short and school is held only while the largest number can attend about six or eight months in the year. 2nd. Teachers take much pains to secure regularity, by the granting of prizes and reporting in county papers the names of pupils regular in attendance, perfect in deportment and recitations. Although teachers are not as well qualified as a rule in the United States as in Ontario, they are alive, read school journals, pursue a regular course of study, and strive to improve. It is as difficult to obtain a 3rd grade certificate in Ontario as a 1st in many States, yet the schools are not quite in that ratio so far as education and progress is concerned. Why cannot Ontario support a weekly school journal? Surely there are live teachers enough for that. Now I would suggest that Examining Boards give this subject more thought, and urge upon teachers the necessity of reading much upon the subject of Theory and Practice of Teaching. It is not enough that a man have a strong and well-trained mind. It should be centred upon his particular line of work. I am aware that many teachers there take no school journal. It is the law in many counties in the State of Michigan that a teacher cannot receive a certificate unless he reads an educational paper. Again, there should be a township organization of teachers, where the parents, pupils, and teachers meet to discuss educational matters. I believe that Ontario, with her well equipped army of teachers, could in this way arouse such an interest as would place her schools still further ahead of anything in the world to-day. She is second to none now.

Yours respectfully,

SAMUEL WARWICK,

Teacher, Northport, Mich.

[We heartily commend the above thoughtful letter, and invite our esteemed correspondent to furnish us with further particulars regarding U. S. schools.—EDITOR.]

NO RECESS —The question now exercising the mind of teachers and school officers in some sections of our country is, "Shall we grant recess or not?" We say grant recess and give pupils fresh air and a run of a few minutes and they will study so much the better for it. The argument against recess is that the children will become demoralized by contact with one another. True, morally and ethically a few may suffer, but all will gain physically; and sooner or later those pure ones will come in contact with the rude world anyway, and what matter whether a few days sooner or later? Again, the chances in most communities, unless they are totally depraved, should be on the side of moral gain for those whose home training and influence are of such a nature as to need strengthening in that direction. Time granted for recess is not lost by any means.

The Albany Times speaks of the two great evils of American schools, overcrowding and overteaching, and makes the following suggestive statement: "It is a fact which Americans may as well acknowledge, first as last, that their educational system contains some radical defects. Our school children are far from strong, mentally and physically, and the education given is often far from practical. Any well-considered plans to improve the system by remedying these defects should meet with careful consideration."

As each generation comes into the world devoid of knowledge, its first duty is to obtain possession of the stores already amassed. It must overtake its predecessors before it can pass them.—Horace Mann.

Special Articles.

THE KINDERGARTEN.*

(Continued from last month.)

FORMS OF BEAUTY.

The Forms of Beauty are developed by placing the four cubes exactly on the squares of the table and the four other blocks in the middle, one on the right, one on the left, one at the top, one at the bottom, moving each one-half inch at a time, always observing the law of opposites, each movement developing a symmetrical figure, until we come back to the original form. A great variety of forms may be made by beginning with a different ground form, working always according to the law of opposites.

FORMS OF LIFE.

The Forms of Life are those which represent the things seen in the daily life of the children—houses, chairs, tables, churches, boats, etc. Their first desire is to pile up the forms as high as possible and then demolish them. We gratify them by allowing them to pile them up and teach them to take them down one block at a time. The natural impulse is to destroy and scatter; they must be taught not to destroy, but to construct one form out of another.

Children may learn much of practical everyday life by means of these Gifts; for example, making an oven out of the cube. The first thing that presents itself is how a fire should be made, then each child selects something to be cooked for dinner, either meat, vegetable, or dessert; how they should be prepared and cooked may be explained, of course one or two things at a time. The dinner cooked, tables and chairs are required, and must be developed from the oven. A table and two chairs are made; joining the table and chairs we have a bed, from the bed we develop a hat, from the hat a cross, from the cross the cube.

Children do not learn this at once, it is a lesson that must be oft repeated, but with time and patience they learn to develop one form out of another, and to see the beauty of order and development.

These give employment to their natural activities, and their ingenuity and invention are brought out and cultivated by constructing other forms from the same material, not by knocking the structure down and reconstructing, but developing one form out of another, beginning always with the most simple forms, and proceeding, step by step, to the more difficult ones.

Through these forms the love of the beautiful is cultivated; and that beauty is the result of order and harmony is most clearly set before the children. They train the eye to see quickly and distinctly, the hand to work carefully, and the feelings to reject everything that is untidy or inharmonious.

The inner perception and intelligence grow brighter and clearer as the eye is cultivated, to see and appreciate the beautiful.

Through its divisions the Third Gift enables the child to arrive after the comprehensions both of external appearances and inner conditions; it leads from the conception of a simple unit to the elements of which it is composed, and thus prepares the way for rational analysis.

This analysis or division of the cubes into parts is followed either by forming the parts again into the original whole, or by creating with these given parts a newly shaped whole, thus ending as should every analysis in synthesis.

In accordance with this development the child will vary the forms, and will find them infinite in variety; the power of repre-

* Read before the Lennox and Addington Teachers' Association, by Miss Emma Robertson, Kindergartner.

sentation will be exercised, and the faculties of perception, reflection, and imagination will be cultivated.

The result of this training or play (it partakes of both) is the exercise of the mental powers—imagination, understanding, will, perception, reflection, and cultivation of taste for the beautiful.

The children learn how to express themselves understandingly about the things they make, the hands and fingers are exercised in a way to make them skilful; they also learn something of the law of weight and the law of equilibrium.

I have been thus minute in the details of this Gift, because the principles on which it is manipulated apply to all the other Gifts and Occupations of the Kindergarten, and the results aimed at are the same, i. e., to develop the moral, physical, and mental nature of the children equally, not to force them in any way.

FOURTH GIFT.

The Fourth Gift resembles the Third Gift in size and number of blocks taken as a whole, and differs from it in the form of the blocks. The cube two inches square is divided once vertically and three times in the opposite direction, making eight oblong blocks, or bricks, as the children call them, one inch wide and two inches long. The capacity for work is increased twofold.

The blocks of the Third Gift always present the same appearance on whatever side they are placed, while those of the Fourth Gift change their appearance at every change of position, and with them the forms can be made in three different ways, lying, sitting, and standing, thus giving a greater number and variety of forms than can be made with the Third Gift.

The forms of Knowledge, Life, and Beauty are developed from this Gift, and the same principles are applied as in the Third Gift, but result in a greater number and variety of forms.

FIFTH GIFT.

The Fifth Gift is also a cube enlarged to three inches square, containing twenty-seven cubes one inch square; three of these are divided once diagonally in halves and three divided twice diagonally in quarters, making thirty-nine pieces in all. The Fifth Gift is an extension of the Third Gift. With the increased material and variety of shape, the facilities for building are increased; the halves and quarters being of the form of the right-angled triangle, they can build large houses with gabled roofs, or a number of small houses, which greatly pleases the children.

This Gift is best adapted for the forms of Knowledge, as more of the geometrical forms may be developed with the slanting line. It also offers greater facility for the study of number. Not only can addition, subtraction, multiplication, and division be carried to a greater extent than with the other Gifts, but the children get a more practical knowledge of fractions; it is better adapted to the forms of Knowledge and Life than for the forms of Beauty, because the pieces are so numerous. It is not an easy thing to utilize all the blocks and develop them symmetrically; it is a law of the Kindergarten that none shall be left out, but all the box contains must be used.

SIXTH GIFT.

The Sixth Gift occupies the same space as the Fifth Gift, so resembles it in size, but differs from it in the form and number of blocks; it contains twenty-seven oblongs the size of the Fourth Gift, of which it is the complement or extension. Three of these blocks are divided lengthwise, making six pillars two inches long and half an inch thick; six of the oblongs are divided crosswise, making twelve blocks one inch square and half an inch thick.

The children become acquainted with these two Gifts by comparing their parts with each other and with the other forms known to them. The new form in the Fifth Gift was the triangle; in this

Gift the new form is the pillar, in which the children discover wonderful possibilities for building.

In these two Gifts the different tastes of the children will show themselves; some prefer to build houses, some furniture. A few will build crosses or monuments, or the forms of Beauty; they will be the older and more cultivated. In these cases the taste inclines to industrial art, designing patterns for carpets, oil-cloths, and ornamentation of buildings. In all this work the children are encouraged to invent, and to imitate as little as possible. It is a lesson slowly learned, as children are naturally great imitators, but after a time, when they become familiar with the material, they will seek for new forms, and learn to develop them from the old ones. They are not under much restraint, heads and hands are usually too busy to get into mischief. Whenever the opportunity occurs a little song is sung either by one or all of the children, and they are allowed to talk one at a time about the things they are making.

TABLETS.

In the Kindergarten we dissect the cube, having it as a whole in the Second Gift, in eight small cubes in the Third Gift, and the eight oblongs or bricks of the Fourth Gift, which are one-half the thickness of the cubes of the Third Gift.

It is still further divided in the Tablets, which represent the surface. They are divided into five forms—the square, right-angled triangle, equilateral triangle, scalene triangle, and obtuse-angled triangle. They are laid on the squares of the table, and the forms of Life, Knowledge, and Beauty developed in a flat outline, making beautiful mosaic figures and designs for all kinds of inlaid work. The Tablets are painted two different colors, as red on one side, blue on the other, which brings out the patterns. It is quite easy to see how this cultivates industrial art in the children.

STICK LAYING.

From the surface we proceed to the line or edge. Sticks the thickness of matches are used; they are cut in lengths of one, two, three, four, and five inches, and laid on the squares of the table. We begin with one stick for each child and add more as the children require them. They take great delight in the beautiful forms which they develop with the sticks. It is a good training for the fingers, while the lessons they learn of neatness, carefulness, and accuracy are invaluable; it also furnishes a fine opportunity for teaching them number.

SLAT INTERLACING.

Making forms that will not fall apart when handled, of wooden splints. This work requires a great deal of patience on the part of the children, for if one splint is not in the proper position, the form will all fall apart when lifted from the table. With practice and experience they become very skilful, and a great variety of beautiful forms may be developed.

CONNECTED SLAT.

The Connected Slat is a measure made of wood in lengths of six inches connected with pivots, so that the different angles and geometrical forms can be made with it.

Ring-laying and the Thread Game represent the curved line. The rings are made of steel, flat on one side; the circle is divided into halves and quarters. These are laid on the table in the same way that we do the sticks, though very different forms are developed from them.

THREAD GAME.

We use a piece of bright colored worsted six inches long, the two ends tied together; this is laid on a wet slate in the form of a square, circle, triangle, or any of the geometrical forms. Each corner is drawn towards the centre one-half inch at a time, until they all meet at the centre.

POINT.

From the line the next step is the Point. A variety of things may be used to represent the Point—beans, split-peas, heads, small sea shells, popcorn, etc. One of any of these things is given to each of the children, which they naturally examine with more or less curiosity to know where it came from and all about it; thus they learn many useful lessons, and take more pleasure in working with it. When ready for work, each child is given a handful of the material; they place them one at a time on the intersection of the lines on the table, and work either from dictation or according to their own fancy, developing either a form of Life, Knowledge, or Beauty. The children take the greatest delight in this work, and often want to continue it much longer than the time allotted permits.

Why Frederick Fröbel called the material for this part of the work of the Kindergarten "Gifts" is not known. Some Kindergartners make no distinction between the Gifts and the Occupations, but call all the work of the Kindergarten Gifts. Those who have received the most thorough training in Germany, and have had the most experience in teaching the system, make this distinction. Lest I weary the patience of my readers, I will leave the Occupations of the Kindergarten for a future occasion.

ROUTINE.

One of the important duties of teachers is to avoid falling into a rut of formal routine. This is hurtful both to themselves and to the children. To themselves because it leads them into a habit of lifeless teaching certain to be ultimately fatal to their success; to the children, because it leads them to think that their study has no purpose beyond enabling them to go through their recitations creditably. Children are very prone to fall into the idea that they only study to recite. So many words to be learned from the textbook, and held in mind long enough to be repeated, and that is all, they fancy, that need be expected of them. But the true, conscientious teacher knows that his pupils can make no true progress until he has taught them to study the subject as well as the book. And he knows that to do this effectively he himself must work independently of the book, using it simply as an instrument to aid him, not as a crutch absolutely needed to enable him to walk. The routine teacher is always bound to his book, and without it is like the lame man without his crutch; or, perhaps, to alter the simile, like a vessel without a rudder; for he makes no progress, though he may seem to be advancing. The avoidance of routine is quite essential to true progress in teaching. The children must be taught the practical value of the lessons they are learning; taught that they learn in order to become wiser and better men and women, not merely for the sake of getting over each day's recitation. To accomplish this the teacher must give instruction by topics rather than by the strict order of the book, and himself labor diligently to acquire, for his own use, all the knowledge he can find outside of the book. Every new idea will aid in making the recitation interesting, which is a great help. A routine recitation is always dull. —*Normal Worker.*

THE RELATION OF EDUCATION TO WEALTH AND PAUPERISM.

As civilization advances, the apparatus and operations of everyday life are becoming more and more complicated, and existence more and more expensive, on account of the constantly increasing and multiplying wants of humanity. To-day even the rudest and simplest occupation—farming—is carried on chiefly by machinery.

A farm laborer of a hundred years ago, if suddenly dropped down upon a modern farm on a western prairie, could scarcely understand anything that is going on.

Even the plows, the harrows, the cultivators, the drillers, the sowers, the hoeing machines, the mowers, the reapers, the headers, the threshers, the winnowers, the very wagons and carts and harnesses, would each and all be a mystery to him; to say nothing of the more complicated appliances and the scientific processes required to convert the raw products of the field into food, clothing, and shelter. The treatment of the soil, the rotation of crops, the method of preserving and utilizing and marketing the harvests to advantage, all require knowledge.

If this is true of farming, it is still more true of every other department of human industry.—*Dexter A. Hawkins.*

A METHOD OF TEACHING TRUTHFULNESS.

BY M. R. O.

That there is in the mind of every pupil a greater or less resistance to evil tendencies, I thoroughly believe; yet before the teacher can render successful aid to this resistance she must understand the mental condition which makes temptation possible. Fear of consequences simply postponed the gratification of a propensity; it does not divert or strengthen the will. Satan first inclines the mind, then fortifies it with reasons, and I merely give him his dues when I add that he is a very active educator.

We cannot do better than to adapt a method so successfully misapplied to our own uses. I shall not soon forget the sudden gleam of intelligence upon the face of a little fellow, ten years of age, whom I had occasion to reprimand for an attempt to copy from a neighbor's slate, when he saw his act in its true light. After some little talk, in which he acknowledged that he could not learn by copying, I asked, "What do you suppose I gave you that question for, Henry—the answer?"

"I always thought that it was the answer you wanted," he replied.

"There you make a great mistake. The answer is of no consequence to me at all if you do not comprehend it. The example was given that I might see whether you could reason it out or not. Instead of showing me that you understand it, you bring to me Johnny H.'s work, which only proves that Johnny understands the example, if you do not. Now who is going to tell me whether Henry understands or not, if he takes care of his neighbor and neglects himself?"

TRAINING vs. TELLING.

In intellectual teaching, a child may commit to memory the whole rules of English or Latin grammar, and may be able to repeat every example and answer every query contained in the book itself, thoroughly and correctly; and thus far he shows the extent of his instruction or teaching. The child is only under training, however, when he is put to the work of applying these rules to the formation of a sentence in speaking or writing; and it is evident that a person well taught in the rules may be exceedingly ill-trained, or not trained at all, to the practice of speaking or writing grammatically. Ere the child, therefore, is a trained grammarian, his mind must be made to bear upon the subject—he must understand it, and actually apply for himself the rules of speaking and writing correctly.—*David Stow.*

See our special offer for "Canada School Journal" for 1884.

PRACTICAL EDUCATION.

"Business colleges" are springing up in every town—why? Because business has adopted new methods, and the school has refused to recognize them. These schools teach their pupils the operations actually used in the counting-room—the common school does not—hence they have cut themselves off, and created separate institutions.

The great need of our educational system to-day is simplification. We have made many improvements, or at least additions, but have withdrawn nothing to make room for them. We have added drawing and music, and we have done well; we have added the elements of science in some places, which was well; but where have we made room for them in the course already full? Nowhere; and the courses have, therefore, become so overloaded that no teacher can perform his duties to his own or the public satisfaction. Constant addition of new matter, no reduction anywhere, results judged by misleading percentages—and yet people complain of cram! What else can we do? Now, teachers who feel their responsibility should advise their Boards of Education that all this must be changed—not by reducing the quality, but improving it by the exclusion of what is extraneous and unnecessary. We are now teaching too much, and too poorly. The main thing the young child needs, is to learn to read, to write, and to count; and by teaching these slowly and surely, we best secure healthy mental growth. We give children so much to do that they cannot either read or write well after two years at school, which is quite time enough if properly taught.

We want to hear less of the teacher in school, and more of the pupil. In a properly organized school, much the larger part of the work is done by the pupil; but we have all seen many places where it is otherwise.

Three-fourths of our pupils will go into the ranks of the world's workers, and we must give them what they need.—*Jas. McAlister, Supt. of Schools, Phila.*

MORALITY IN SCHOOL.

The morals of our schools, or rather an essential lack of moral teaching, has afforded material out of which a target has been created, at which noisy and glittering shafts are thrown. The attack is impotent. Even could it be powerful, the certain repulse would contribute still farther to the high standing of the schools. Every statute upon the books pertaining to the conduct of schools makes the moral character and standing of the teacher the first and prominent condition of teaching. It is well understood that only men and women upright before God and of good repute before the world can occupy places upon the platforms of the schools. How is it possible for daily and intimate association with such persons to occur, and moral teaching be absent? Can a woman, good and true, pass daily before a swarm of boys and girls without contributing somewhat of her truth and goodness to the make-up of their characters? Pupils are in the company of these teachers six hours a day. Of the 168 hours in the week, 30 hours are in school; these are not hours of social intercourse of pupil with pupil, but hours of study and instruction; the conversation and deportment are proper and polite.

The morals of the pupil in school can be directed in right only, unless the teacher be vicious and wicked. Who is willing to stand forth and pronounce the latter true? Where in our civilization can be found a better tried, more conscientious and upright class of people than are the women who constitute the great mass of our teachers? The truths that can be told of their self-sacrificing ef-

forts, not only in public but in private instruction, visiting the sick and dispensing alms from their own scanty purses, well put to blush those who, either ignorantly or viciously assail, the public school because of its immorality. Thirty hours a week in school can never stand in place of 138 hours elsewhere. School may supplement, or even in some cases tend to counteract, vicious home-training; it can never, and ought seldom to, supplant it. Harm cannot reach the child during school-hours. When the boy in acts or words seems to be viciously inclined, let the questions be asked, "Where does he spend his time from breakfast until 9 o'clock?" "Where is he during the one and a half hours at noon?" Most of all, "Where and with whom is he from the close of the afternoon school until bed-time?" It is a mistake to suppose that school can guard the morals of pupils without close and hearty coöperative supervision at home. From four o'clock until bed-time is ample time in which to ruin the habits of boys and girls when their whereabouts is known neither to father nor mother. The school takes no charge of the children during these hours; the overlooking belongs to the home. While the teacher's influence reaches far out and into these hours, the power of home is requisite for safety. My official duties bring me in intimate relations with boys and girls. Often I am compelled to know more than I would of their domestic life. Denver is no better nor worse than other cities. All the power of the school authorities cannot save boys and girls from harm when unhealthful influences are permitted to surround them out of school-hours. The schools promise, and are able, to preserve and protect the character of every child committed to their care, but only with the help, support, and coöperation of the home. When teacher and parent are working together in the education of the pupil he goes not astray.—*Aaron Gove, Denver, in N. E. Journal of Education.*

SCHOOLS AND SCHOOLMASTERS OF GERMANY.

BY SEBASTIAN THOMAS, LODI, O.

Since Francke's time the schools of Germany have sustained such a reputation of superiority that they have compelled universal admiration, and have ever since served as models by which the schools of other nations have been organized. But whatever merit of excellence may be claimed for them, their reputation, nevertheless, depends not so much upon the system by which the schools are managed, as upon the character and ability of the schoolmaster. The German schoolmaster is the life and soul of the German school system. Without him, the system becomes a useless code of legislation, prefaced by German pedagogical theories. In fact, any school system is a resultant of teaching power.

It is useless to clamor for school reform so long as nothing is done to improve our teachers, transposing them from the side of mere school-keepers to that of expert, life-long professional schoolmasters. "Das Schullehr-Seminar," the teachers' training school, is that which gives to the German schools their reputation.

In Germany, no one is authorized to teach a public school who has not satisfactorily finished the prescribed course of instruction in the teachers' seminary, and the result is that the schoolmasters and school-mistresses of Germany are all trained workers, everywhere recognized and honored as belonging to a noble profession.

The applicant, to be admitted to the teachers' seminary, must be between 16 and 24 years of age; he must have a certificate from a physician, certifying that he is in good health, and free from any bodily defects that might be a hindrance in his future calling. He must have a certificate from the teacher under whom he prepared for the seminary testifying to his moral character, good habits, industry, and ability. His parent or guardian must present satisfac-

tory evidence of his financial ability to defray the expenses that accrue during the seminary course. He must also pass an examination in arithmetic, geography, history of Germany, elements of natural philosophy, drawing, penmanship, reading, grammar and composition, religion and music.

The course of instruction at the seminary covers three years. The acquirement and proper comprehension of the needed knowledge is aimed at, and an effort to develop the ability to apply principles and an expertness to teach and manage classes is made prominent.

The branches taught at the seminary are:—1. Religious doctrine and Bible history. 2. Pedagogics. 3. German language—grammar, composition and rhetoric, reading and literature. 4. Mathematics—arithmetic, algebra, and geometry. 5. History—German and general. 6. Geography. 7. Natural philosophy, the aim in this branch being to acquaint the student with the three kingdoms of nature, and to enable him to make free use of his knowledge of nature by object lessons in his school. 8. Penmanship. 9. Drawing. 10. "Turnen" (gymnastics). 11. Music—theory of music, vocal, piano, organ, and violin. 12. Instruction in the language of the deaf and dumb. 13. Fruit-tree culture.

After the completion of the course at the seminary, the young candidate must serve two years as assistant teacher in a public school under the supervision of an experienced teacher recommended by the higher school authorities. During these two years, the candidate's fitness for the teacher's profession will be determined. At the end of the two years, he must pass the final examination, and he is then raised to the office of schoolmaster, and receives a "definitive appointment" from the "Kreis Schul-Commission."

He is now a young schoolmaster, with a position for life, and a salary that will never be reduced, but rather increased from year to year in proportion as he raises himself into the higher grades of the profession. The village in which he teaches furnishes him a home free of rent. He is now a fit hero for one of Auerbach's novels. Nothing has a greater influence upon a young man like our young schoolmaster, to fill his heart with warm and generous emotions, than the thought that he has found his life-work, and that he has a spot of earth which he can call "home," wherein he can quietly rest from the labors of the day, and renew himself in body and spirit for better work for the morrow. By the next spring, when the stork has come back again, and the nightingale sings her evening song near her new nest in the hedgerow, Auerbach finds our young schoolmaster guilty of strolling in the moonlight with the Burgomaster's or some other magnate's daughter, and in the next chapter you can hear the church bells ring, and see the entire village flock to the church to witness the marriage ceremony.

This brief romance cannot well be omitted in following the life of a German schoolmaster, as it comes, with a stereotyped accuracy and irresistible certainty, at a particular period of his existence.

The salary of the schoolmaster depends upon the position which he occupies, ranging generally from 1,000 to 3,600 marks. There are inducements all through his professional life, by effort and study, to advance into higher positions and at last end with headmaster. But an examination is necessary for every promotion. As it is among men the world over, you will find two classes among the German schoolmasters; one the moving, active, progressive class, and another the immovables, the stagnants, who are like gateposts, never moving from their place. The latter class I found universally addicted to long pipes and large beer mugs. One must keep to the progressive class to bring back inspiring reminiscences. They are the ornaments of the profession. Their names are found on the programmes of "Lehrervereine," the teachers' associations and teachers' meetings of different provinces and districts.

After a continuous and faithful service of ten years, a small yearly pension is added to his salary. Should he become disabled through sickness or old age, the pension is reasonably enlarged to afford him a quiet and comfortable, though not ostentatious living. If the schoolmaster dies leaving a family, his widow is pensioned and all his children under the age of twelve years. The German Government is wise in thus recognizing the schoolmaster as one of her servants, and in point of importance and usefulness giving him at least an equal place with the soldier. Like the soldier, when duty demands it, he lays down his life in his calling with loyalty to his fatherland. By this wise provision of the Government, the schoolmaster can well remain faithful to his vocation to the end. In his old age the almshouse does not stare him in the face as it would many of us, did we not turn aside in after years and engage in other work which does not leave us dependent upon the capricious and uncertain decisions of a Board of Education.

The German schoolmaster is less nervous and acts more deliberately than the American teacher. He is master of his situation in more senses than one. He acknowledges no other authority than that of his Government, to whom only he is responsible for his conduct. He teaches thirty hours in the six days of the week, for ten months of the year. In the summer he makes pleasant excursions in the beautiful German forests with his pupils, to whom he is a life-long guide and father. The following incident beautifully illustrates the love and faith the German children bear to a kind teacher. One day while walking in Darmstadt with a venerable old man, the head-master of the girls' school of the city, we met a young girl with a basket on her arm on her way to market. As soon as she saw us, she crossed to meet us, her fresh round face covered with a pleasant smile. The old man put out his hand, she eagerly grasped it, and with tears starting to her eyes she exclaimed:—"My dear teacher, I am so glad to meet you. I came this way yesterday, but did not see you. I have a new place, and the people are very kind to me." "I am very glad for this," replied the old schoolmaster, "do your work well, my child, be a good girl, be pious, and the dear God will not forget you." With these words he dismissed her. He then said to me, "She was one of my pupils. She graduated last Easter day. Her parents are dead, and so she looks to her teacher for guidance and advice. She went recently to a new place to work, and she was very anxious that I should know about it."

His vacation in the summer the schoolmaster spends in a trip to the Alps or other places of romantic scenery. His physical build shows that his disposition turns to the sunny side of life, and that he gets at least par value of enjoyment out of life. The cares and perplexities of his profession do not bear down upon him in spasmodic visitations, but are diffused and borne calmly through a long and happy life.—*National Teacher.*

ERRATA.—In the article "Professional Training of High School Teachers," in the October JOURNAL, the following errors were overlooked in the proof-reading:—

Page 211, for "Formal School" read "Normal School," "skilled requirements" read "skilled acquirements." Page 212, for "insufficient persons" read "inefficient persons," "this work" read "their work." Page 213, for "fit thousands" read "fit themselves," "admirably characteristic" read "admittedly characteristic." Page 214, for "County Model School" read "County Model Schools."

Col. Parker's *Talks on Teaching* will be reprinted in coming numbers of the Canada School Journal.

Examination Questions.

GRAY AND "THE ELEGY."*

LIFE OF GRAY.

1. In the Life of Gray give dates for the following events and associate them with the nearest epochs of importance in British, European, or Literary History; i. e., fix each by reference to great wars, great statesmen, great authors, or great books:—1st, his Birth; 2nd, his Eton Days; 3rd, his University Course; 4th, the Composition and Publication of the Elegy; 5th, the Publication of "The Bard"; 6th, his Appointment as Professor of Modern History; 7th, his Death.

2. Give short notices of Gray's personal and literary friends.

3. Describe Gray's personal character and literary tastes, and illustrate these traits by references to his life and writings.

4. Compare Gray with the authors whom he most resembles as: (1) a Subjective, (2) a Natural, (3) an Artificial Poet with the "art to conceal art."

5. Sketch the line of thought in the Elegy, introducing into your epitome briefly apt quotations.

6. Quote from the Elegy passages in which the thought is similar to that in each of the quotations cited below:—

1st. "The day is done and the darkness
Falls from the wings of night."—*Longfellow*.

2nd. "Vital spark of heavenly flame!
Quit, oh quit this mortal frame!

*Trembling, hoping, lingering, flying,
Oh the pain, the bliss of dying.*"—*Pope*.

3rd. "Sed omnes una manet nox
Et calcanda semel via leti."—*Horace*.

(But the one night awaits all and the path of death must be trodden once.)

4th. "Pallida mors æquo pulsat pede pauperum tabernas
Regumque turres."—*Horace*.

(Pale-faced Death knocks with impartial foot at the hovels of the poor and the palaces of kings.)

5th. "The Roman gathered in a stately urn
The dust he honored."—*Howe*.

6th. "With lisp of leaves and ripple of rain."—*Swinnburne*.

7. Name the figures, explain the points of resemblance in all similes, and illustrate the allusions in:

(a) "The curfew tolls the knell of parting day."

(b) "Each in his narrow cell forever laid."

(c) "The breezy call of incense-breathing morn."

(d) "Let not Ambition mock their useful toil,
Their homely joys, and destiny obscure."

(e) "If Memory o'er their tomb no trophies raise
Where through the long-drawn aisle and fretted vault
The pealing anthem swells the note of praise."

(f) "Storied urn"—"animated bust"—*mansion*. (Explain.)

(g) "Ample page"—"rich with the spoils of time"—"growing virtues"—"uncouth rhymes."

(h) "Or heap the shrine of Luxury and Pride
With incense kindled at the Muse's flame."

(i) "Ev'n from the tomb the voice of Nature cries" (How?)

(j) "And read their hist'ry in a nation's eyes."

8. Quote the Epitaph in full, then explain its sentiments and similes in detail.

9. Enumerate the advantages denied and temptations spared to the "rude forefathers of the hamlet" by their destiny obscure.

10. Give two examples each of onomatopœia, alliteration, antonomasia, and aphæresis, explaining in what each figure consists.

Time—2½ hrs. Composition (50) judged from the style of the answers.

Most teachers lack enterprise to strike out anew, they prefer to cling to the wreck year after year. Let your heart counsel you; take courage. Determine to improve your condition. Yield to no discouragement. The past year may be a stepping stone to a prosperous future.—*N. Y. School Journal*.

An exchange well says that "men who are afraid of dying from overwork of their brains, would commonly improve their prospects of a long life if they would work their brains more, and worry less about their brains."

Practical Department.

* SCHOOL HYGIENE.

There are few subjects of as much importance in their bearing upon the welfare of the people of this Province in the near future as that of "School Hygiene." I am therefore glad that it is one of the subjects which you have selected for discussion at this meeting of your association. I trust that the remarks which I have been requested to make will be taken as merely the opening of the discussion, that others will follow me, and that you shall have an earnest consideration of the questions taken up. I suppose it is hardly necessary for me to prove that, as a general rule—not in exceptional instances merely—boys and girls, as well as their teachers, are not improved in health by their school life; in other words, that there is plenty of room to struggle after the ideal hygiene conditions in connection therewith. Were it necessary to prove this I would do so by pointing to either teacher or pupil at the close of school term and again at the close of vacation. I need only point: you have seen the contrary pictures often enough to be able to recall them to your mental vision. Shall we not then inquire whether there are changes which we can help to bring about to improve the condition of school life, and what they are? And shall we not one and all do our part and do our best to bring them about? I feel that if any good is to come from a discussion of this subject, it must be by each one of us taking hold of it in this practical way; and I do believe that it will be so taken hold of. One of the first things then that we shall enquire into is the condition of the

AIR IN OUR SCHOOLS.

It is a well-known physiological fact that a healthy adult man exhales $\frac{1}{10}$ of a cubic foot of carbonic acid per hour. It has also been found by experiment that six parts of carbonic acid in 10,000 of air is all that can be breathed with proper regard for health: i. e., 2 parts in 10,000 in excess of the amount naturally contained in the atmosphere. A very simple calculation then tells us that to keep the air at a healthy standard 3,000 cubic feet per hour must be supplied. It has further been found that with the ordinary appliances for ventilation, and taking into consideration our climate, three times in an hour is about as often as the air in a room can safely be changed. This, then, would require that a room should be so capacious as to give 1,000 cubic feet of absolute space to each individual adult; this, in a room twelve feet high, would be a floor space of a little over nine feet square. But it may be said that children do not require so much because they are smaller, and there is not so much blood to be oxidized. True, there is not so much blood, but remember that there is more growth and waste in proportion; their blood circulates more frequently, and their respirations are more frequent; and that their organizations are more delicate and susceptible to unhealthy influences. Hence we cannot safely deduct much from the amount of fresh air, and consequently from the air space, required by children. I am aware that the army regulations only allow to the soldier 600 ft., and should we ever give our children less than the hardy soldier? I now ask you to tell me in the discussion which will follow in what proportion of our schools we will find an air space of 1,000 cubic feet per individual; and to tell me also what is about the average space that is to be found. I hope that we shall get answers to these questions, as the presence of so many who are able to answer is an opportunity of which I feel sure the board with which I am connected would desire to avail itself in its labors in regard to this subject. Having

* The above has been kindly furnished by J. A. Clarke, H. S. Master, Smith's Falls.

* A paper read at the Ontario Association by Dr. Oldright, M.A., July, 1883.

settled the average amount of air space, the next question to be put is, Are there appliances for changing the air in it the requisite number of times to give a product of 3,000 feet, or something near that amount? If not, what is the result? It has been found as the result of actual analysis and experiment that air containing eight or nine parts in 10,000 of carbonic acid produces nausea, loss of appetite, headache, irritability, and other symptoms. Are your little scholars ever peevish and fretful? I must not ask whether children of an older growth ever become so—no wonder if they do. It is hard to get exact statistics of mortality in connection with various degrees of vitiation of air by respiration, as other unsanitary conditions are often associated, but the above results were proved to be solely attributable to the vitiation of air by respiration in the several degrees named. Of course, mortality statistics associated with an indefinite amount of air vitiation are to be had. We now come to the consideration of the

MEANS FOR CHANGING THE AIR

in the school-room—the means for getting in this “1 kormeddy,” and we shall find that there are two more little modifications in the “frame” which I would not make for fear of spoiling its vigor by too much matter of fact, but to which we must when we come to the matter-of-fact subject of ways and means allude. Whilst the air “doesn’t cost nothink” “out-dores,” it costs as little (not much in proportion to its worth) to get it into the right place, and “git it warm;” and whilst “it ain’t much trouble to make a hoal,” it requires much thought and time and trouble (and this all means money) to get the “hoals” in the right places for different seasons and under varying circumstances. And it is this question of money combined with a want of proper understanding of the consequences, and of the whole subject indeed, that stays the hands of those who have not yet appreciated the fact that the question at issue is of the value of children’s and teachers’ brains and bodies *versus* the cost of a few ventilating tubes and the ingenuity required to devise and prepare them—*plus* the cost of fuel and enlarged school-rooms.

First, then, what should be the size of the “hoal” or holes—for it wants some to let the bad air out as well as to let the good air in. This will depend upon the rapidity of currents of air that may be borne, and then again upon whether the air is warmed when introduced; but as a rule about five feet per second may be borne. There are 3,600 seconds in an hour, and we want 3,000 feet of air in that time, i.e., $\frac{1}{3}$ of a foot per second for each individual: this with a current of five feet per second will require one hole per individual to be $\frac{1}{3}$ of a square foot, or 24 square inches; and the same to let out the air. If heated it will have to flow more rapidly, and it may more safely be allowed to do so. Whilst I am speaking of heating, let me dispose of a popular fallacy. I think it is generally supposed that in winter people can more safely crowd together and do with smaller air space than in summer. Unless hot air is heated before it is introduced the reverse of this is true; the air has to “git warm,” as one poem has it, and consequently cannot be changed so frequently unless we are to be chilled by it.

The next point in connection with the ventilation of the school-room is the relative position of the inlets and outlets. These relative positions will vary much according to varying circumstances, amongst which may be mentioned the shape and size of the room, the season of the year, the mode of heating. And let me here say that the ventilation and heating of any room must always be considered together. I shall not be able, in the compass of this general paper, to consider minutely all the varying circumstances alluded to. For a fuller description of details of some of the plans to be resorted to I shall refer you to one or two papers within your

reach. Some others we may consider somewhat in detail, and there are certain general principles which, if strictly remembered and carried out, will help us much in the consideration of details in each special case. There are four of these general principles that must never be lost sight of:—1. The air brought in must be distributed throughout the whole of the breathing space. 2. It must be of a suitable temperature when it comes in contact with the inmates, and of a suitable degree of humidity. 3. It must be pure. 4. Hot air is lighter than cold. It is of great importance to bear in mind these few principles; it will be found that every defect in ventilation is due to a violation of some one of them.

In many of our school-rooms the feet are in Greenland, whilst the head approaches the torrid zone. The light hot air is at the top of the room, the colder strata below. The air may thus be in a stagnant condition, or an attempt may be made to let the heated and supposedly impure air out by ventilators at the top. And now what happens: in rooms heated by stoves just as soon the air gets enjoyably warm it flies off and away, the lower part of the room being always uncomfortably cold. Following out the principles which I have expressed above, sanitarians in various places seem to have simultaneously hit upon a modification of the Ruttan method, which may be expressed thus:—Cold pure air is conducted so as to impinge upon the stove for heating surface; here it becomes heated and ascends. Meanwhile at the sides of the room and close to the floor are outlets, sometimes funnel-shaped, taking off air from the floor line by means of pipes passing up through the room and connecting with the stovepipe (of which I here show a sample), with the chimney, or with the outside air. The air heated by the stove rises to the ceiling; cooling, it gives way to that which, expanding beneath it, rises to take its place, falls over in fountain form, gradually settling down till it is drawn down and out by the outlet shafts. This plan is illustrated and described in a paper by Dr. Cassidy, to be found at pages 150-1 of the First Annual Report of the Provincial Board of Health, to which any person in this audience can readily refer. You will see that a constant circulation of air is thus carried on. I now proceed to show you a series of diagrams which came to my hand most opportunely whilst preparing this paper. They illustrate a series of experiments by an architect, Mr. Warren R. Briggs, and are published by the State Board of Health of Connecticut. They show how much more a feature than is generally supposed are differences in the relative position of inlets and outlets in providing for the distribution of fresh warm air to all parts of a room. (See reprint in New Hampshire Report, pages 162-167.) I regret that I have not time to enter into other methods of winter ventilation, and modes of introducing and distributing heated air.

I must now turn to methods of ventilating in summer. Even in summer in Canada the air is not often of as high a temperature as our bodies, 98 $\frac{1}{2}$ ° F. It is generally much cooler, and becomes heated by contact with us. Hence, put outlets in the top and it will rise to them and away. Then “make a hoal, and all the air will come in of itself.” But the “hoal,” if not of a particular kind may sometimes allow the air to blow too directly on the teacher’s neck, especially if it is already blowing hard out of doors. Hence, the teacher may not despise a few hints as to various devices for breaking up a current of air or directing it above his head, especially if the devices be of such a nature that he can at once introduce them himself.

1. One such may be adopted by raising the bottom sash of the window and filling up the opening with a piece of board. You will not see much gain from this until you remember that a broad air duct has been thus constructed, opening upwards between the two sashes, and directing the current of air upwards.

2. Double panes with a slit at the lower part of the outer and at the upper part of the inner will act in the same way.

3. So will a board set in the frame an inch or so under the sash.

4. Boards sloping upwards from the top of the upper sash may be used.

5. Perforated boxes running around the room, and having connection at one or two points with the outside air, may diffuse small streams of "this commodity" from their numerous perforations.

6. Wire screens and other contrivances will be found described in some papers which will find place in our next annual report.

The third principle that I laid down, that the air must be pure, it might seem almost superfluous to mention, and yet how often does it happen that the air supplied to our rooms—school-rooms as well as others—is taken from halls (where it has already done its part), from cellars, and dirty yards, and often in addition made to traverse flues containing the accumulated dust and rubbish of months and years. I can point to several public buildings in Toronto where this and worse than this has taken place.

It would be very interesting to take up the various procedures for determining the purity of air and sufficiency of means of ventilation, but time will fail us, and I will merely show you a little portable instrument for recording the velocity of currents of air, and which would be very useful to those charged with the sanitary inspection of schools.

FIRE ESCAPE AND READY EXIT.

Before leaving the architectural part of my subject I should refer to the other closely connected precautions for the saving of life. If I mention the Sunderland disaster and the fire panic in New York you will know what I mean. Good broad stairs, doors opening widely outwards, and efficient fire escapes, are some of the requisites needed. And I would desire to speak in terms of commendation of the action of some of our school authorities in exercising the pupils in fire drill. Closely connected with the subject of pure air in and around school buildings is that of the

DISPOSAL OF SEWAGE,

but as I have caused to be placed in the ante-room a number of copies of a pamphlet on that subject recently issued by the Provincial Board of Health, I will merely ask each member of your association to take one, and read such parts of it as will apply to his own locality, and I would especially call the attention of school inspectors, principals, and trustees to pages 6 and 17. If they will not adopt the suggestions there laid down I would at least ask this—that if they have in the past been so thoughtless as to subject to disgust and inconvenience those who cannot from motives of sensitiveness allude to the matter themselves, they shall, now that their attention is called to the matter, provide a remedy, and save in this respect much suffering and seeds of future ailments. In regard to

DRINKING WATER

there is not much to be said under the head of school hygiene that will not equally apply to hygiene in general. One thing, however, the teacher should look after for himself and the pupils, the condition of the filter. Filters are often used for months, and even years, without a change of their solid contents, except by the addition of a large amount of organic matter retained in the filter, and which becomes a source of danger. I believe that in very many instances teachers and other school authorities are doing their best to battle against the spread of

CONTAGIOUS DISEASES,

and I feel sure that many of you are often annoyed and made anxious by accidentally finding out that some hidden source of

danger has been lurking unknown to you in the midst of your little community. The only remedy for this will be based upon the carrying out of the provisions of the Public Health Act of 1882. By that Act it is incumbent on every householder, and on every physician under whose charge a case of infectious disease dangerous to the public health has come, to report the same at once to the health officers. Where there is no specially appointed board of health the members of the municipal council are the health officers. But many of the latter would not know what to make of it if they found disease reports coming in to them. Hence it is no wonder that the reporting of contagious diseases is so largely disregarded. Many of our municipalities are, however, waking up, and in several the law is strictly complied with. The Provincial Board is endeavouring to have a local board established for every municipality or group of municipalities, and it trusts that you will lend your educating assistance and influence in that direction.

A greater discrimination should be used by some in dealing with the exclusion of persons associated with cases of contagious disease. I have known instances where the brothers of typhoid patients have been excluded from school, a proceeding quite unnecessary; whilst on the other hand the brothers of scarlet fever patients, and even the patients themselves, have returned before the peeling off of the skin has been completed. Do not let any person or thing associated with a scarlet fever patient return to school till you have the certificate of the medical attendant that all necessary conditions and precautions consistent with disinfection were obtained.

I believe that

DEFECTS IN VISION AND HEARING

often get our school children into trouble when they do not deserve it, whilst, on the other hand, some unsanitary provisions have much to do with producing such conditions. These, however, have been considered in various quarters of late, as also has the effect which ill-made seats have in producing stooping, contracted chests, and even

SPINAL CURVATURE.

With the subject of dress it may be thought by some the teacher—at any rate the male teacher—has not much to do. Well, perhaps only in one respect, which I shall mention in order to put teachers on their guard. I have seen children very ill, and one at least nearly lose his life, from being caught in a storm and obliged to sit with wet jackets on. Sometimes, too, the thoughtless chicks may have been indulging in a good wading time in a neighboring creek in order to test a pair of new boots. Will the kindly teacher think it too much trouble to save his, or her, little pupil's life by an ounce of prevention offered in this direction? One more point and I am done. If school hygiene, or hygiene in general, is worth anything, why not have it taught more extensively in schools? You may say "What, after just speaking of the burdensome multitude of subjects at present being learned, or attempted to be learned?" In reply I would bring this paper to a close by a quotation expressing my position on this subject, from a paper by Prof. Austin, of St. Thomas. I may say in explanation that St. Thomas was at that time much exercised over the question of establishing a system of sewerage. Listen to Prof. Austin, himself an instructor of youth:—

"But even should it be shown that something now on the school programme would have to be omitted, we do not think this should prove an insuperable objection to the introduction of the instruction and training desired. The branches of the great tree of knowledge have so multiplied in this day of scientific research that an eclectic course of study is a necessity, and the demand of the age is for the practical as distinguished from the theoretical and ornamental. Now what could be more directly and universally practical.

than the great laws that govern us in our physical relationships and the rules that should govern us in everyday life? If, then, a selection must be made, why not take the most intensely practical subjects? For of what use, so far as this life is concerned, is culturing so highly the mind if the body is too weak to bear the strain and pressure of life's battles? Of what use garnishing the jewels till their resplendent lustre dazzles all beholders, if both casket and jewels so soon are to be thrown into the pit? Why be so anxious to increase the size and value of the cargo, if the vessel is so poorly built that the storms will surely wreck her in mid-ocean? Now we are very much mistaken if this instruction and training for which we plead is not really more practical and important in every day life than some of the subjects usually found in the curriculum of the school. Let us take, for example, ancient history. Outside the professional walks in life, of what practical value is the amount of ancient history usually received at school? Leaving out of consideration the mixture of myth and mystery, of truth and fable, of error and exaggeration usually found on the historic page, can any one for a moment doubt that hygiene and physiology would be of more practical use to nine-tenths of our pupils than this branch of study? The very many questions which ancient history presents for our study and investigation may be interesting enough to the historian and pleasant enough as a pastime, but to us in this practical age are not of as pressing importance as more recent problems. Whether Thebes had 100 gates, whether Romulus did really found Rome, whether Alexander untied or cut the Gordian knot, whether the vision of Constantine was an illusion or a reality, may have been burning questions in the early ages, but after a lapse of a few thousand years they have lost something of their freshness and interest, and hardly arouse as much enthusiasm in St. Thomas as the burning question of the great sewer."

In regard to mental rest and exercise you have more than once listened to your old and eloquent friend Dr. Workman; that is enough said, except this, that I have always less fear of allowing children to occupy and amuse themselves with letters and slate pencils at their own sweet pleasure, even though it be at an early age, than I have of burdening them with a compressing multitude of studies and long tasks after the commencement of what would be called by some the legitimate school age.

You have in your midst, too, many warm advocates of the further extension of the Kindergarten system. Would that I could speak of the part it plays in the interchange and combinations of mental and physical exercise, rest, and recreation. A few words now regarding

PHYSICAL AND MENTAL EXERCISE,

rest, and recreation, should be said. I fear that into the schools the tendency has crept down from the colleges to run athletics mad. I have seen children with weakly organizations tempted by the incentive of a prize to risk their safety in a race or other athletic contest, and I have felt sorry for their little pale faces and fluttering hearts.

I noticed a year or two ago that in the schools of Lindsay the ten minutes' recess was abolished, or to be abolished, and I was very sorry to see it. Oh, what a stock of fresh lung-expanding and sprightliness over the pupil lay in that ten minutes to carry him through the work of the next hour, and if the teacher can only lay aside his dignity for ten minutes and mingle in the sports of the boys it does him good, both in himself and with the boys, for the latter, without losing their respect, find out that the master really has interests in common with them, and was once a boy himself.

Speak a word in season for the "Canada School Journal."

JAY GOULD'S LIFE.

Senators Blair and Call, of the Senate Sub-Committee on Education and Labor, listened to information on labor and capital which Mr. Jay Gould had been invited to give. In reply to a question asked by Senator Blair, Mr. Gould said:—

"I was born at Roxbury, Dutchess County, New York State, May 27th, 1836. My father was a small farmer who kept a dairy of twenty cows. I was the only boy in the family, so I helped my sister in milking the cows both morning and night, and drove them to and from the pasture. As I was obliged to go barefoot during the summer, and often had my feet pricked by the thistles about the fields and pastures, I concluded I didn't like farming, and so I one day asked my father to allow me to go to a school which was situated about fifteen miles distant from home. He replied that as I wasn't worth much about the farm he would give me my time. I found a blacksmith near the school who would board me if I would write up his books at night. I was then about fourteen years of age. I attended school for a year and then obtained a clerkship in a country store, where I was obliged to work from 6 a.m. to 10 p.m. By this time I had acquired a taste for mathematics, especially surveying. By getting up in the morning at 3 o'clock and studying until 6, I obtained a good knowledge of the latter branch, and at length started out to find employment as a surveyor.

"I made an engagement with a man who was making a map of Ulster County at a salary of \$20 a month and expenses. When he sent me out with my instruments to survey a portion of the country he gave me a pass-book and told me to get trusted for my board at the several places through which I passed, and he would pay the bills. I soon found that the people were not willing to trust my employer. The second day out I presented my pass-book to the man who had entertained me, and told him to put down the expense. He looked at me very angrily, and then said: "I guess you don't know your employer. He's failed three times already. You've got money and I'm going to have it." This frightened me, but I managed to explain to him that I didn't have a cent, and in proof of the statement I turned my pockets inside out. Convinced of my honesty, he said he would trust me until I could pay the bill. I thanked him for his consideration and left the house. As I walked along the road I felt as if my heart would break with grief. I could see nothing ahead but failure and misery. In my despair I went into the woods and had a good cry. Then I got down on my knees and prayed.

"When I arose," continued Mr. Gould, "I had made up my mind to go ahead. Late that afternoon, having had nothing to eat since morning, I called at a farm-house and received some bread and meat from the hands of a kind-hearted woman. Just as I was leaving the yard her husband called me back and asked me to fix a north and south line by which the time of day might be determined. I did so, and received, after paying for my lunch, seven shillings. It was the first money I had earned since I started out, and, of course, it gave me new courage and confidence in myself. The man for whom I was working at length failed. I proposed to the other young men who were employed in the survey that we go ahead and complete the map. We did so, and when the work was done I sold out my interest in the map for \$500. Soon after I made maps of Delaware and Albany counties, and in this way succeeded in accumulating \$5,000. While surveying I became acquainted with a gentleman named Zadock Pratt, who took great interest in me, and invited me to go into the tannery business with him. Mr. Pratt sent me out into the western part of the State, where I found a fine hemlock growth. We put up a saw-mill and blacksmith-shop, and were soon doing a large lumber business. Afterward I bought out

my partner and continued operations for some time. Just before the panic of 1857, I sold out my business to Charles M. Leupp, of New York.

"When the financial crash came everything went down very low. Finding that Rutland and Washington Railroad bonds were selling at 10 cents on the dollar, and believing that money could be made by purchasing them, I left everything else and went into railroad-ing. I was president, treasurer, and general superintendent of the road for a long time. I made a study of the business, and succeeded after a while in bringing the stock up to par."

INDUSTRIAL EDUCATION.

The training of the public schools in this country, though a far surer preventive of pauperism and crime than that of the parochial schools or the churches, is yet very far below what it ought to be and may easily be made to be. The instruction deals too much with the abstract, and too little with the concrete; too much with words and names, and too little with ideas and things. The child should be taught to memorize less and to think more. The elements of industrial education could be taught with great advantage in our public schools, as they are and have been for years in the public schools of Germany. This would enable the children to do something as well as merely to know something; and would tend directly to prevent and reduce pauperism, by qualifying them on leaving school at once to begin earning a livelihood.—*Dexter A. Hawkins.*

WHISPERING.

Many teachers are fretted and troubled by the whispering of their pupils. They ask, "How can we stop whispering?" Suppose we put this in another aspect, and ask, "How shall we prevent their wanting to whisper?" The usual way is to have a rule against it, and a penalty. So much is deducted from their standing, or they are made to stay in at recess or after school. But let the teacher give the pupils employment, and then they will not be likely to whisper. "An ounce of prevention is worth a pound of cure." It is not well to make a rule against whispering. Let the pupils know that you do not want it done, and then try the effect of employment. At all events, do not consider the scholar as a reprobate if he will whisper. Reflect what you would do under the same circumstances; reflect further, that teachers are very apt to whisper when together. And if a pupil whispers, it is not absolutely necessary to rap on your desk and look crossly at him. The world will not fall to pieces if one or ten whisper each day. Be brave, then, and do not be frightened if one whispers.

Let us see how it can be stopped, for a school-room that is full of noise and confusion is an unsightly spectacle. Noise and study are incompatible. Explain this to the scholars, and enlist their aid in the matter. Make them find that you want to make the room pleasant; that you do not want them to be troubled and harassed by others interrupting them. These plans may be tried to accustom the children to abstain from speaking:—

1. Ask them to go without whispering for a half-hour, or hour, and at the end of that time ascertain who have succeeded, letting them raise their hands. Commend their success; give them a little rest, and then let them try another period.

2. Have a period set apart for speaking, by having a large card marked "Study Hour" on one side, and "Needful Speech" on the other. At the end of each hour turn this card.

3. Keep an eye on the noisy ones and give them a separate place to sit, not so much as a punishment as to prevent their troubling others.

4. Keep a record of those who whisper much, and class them as "disorderly," and lower their standing for good behavior. This needs to be handled with care.

5. Detain those who are noisy, and try to influence them by a kind, personal talk.

6. Appoint some of these as monitors.

7. Give extra employment to those who seem to have time to whisper.

8. Make a great distinction between those who whisper about their studies and those who whisper about mischief.

9. Dismiss in order of orderly conduct as you have noted it—saying I will dismiss in the class—(a) "Those who have seemed to me to be successful in managing themselves; they may stand—James, Henry, etc., etc." After dismissing these—(b) "Those who seemed to me to be moderately successful; they may stand—William, Mary, etc." After dismissing these—(c) "Those who have had the least success, these may stand—Susan, etc." Then dismiss these.

There are many other methods, but the above carefully applied, and followed by close personal attention, will generally suffice.—*N. Y. School Journal.*

NORMAL SCHOOLS.

Prof. John Ogden, Fayette, O., believes:—

1. In sound academic learning as the only basis for successful professional practice in teaching.

2. That this should, as far as possible, be acquired in the public schools and colleges with which the State is liberally supplied, and for which abundant provision has been made.

3. That since this is not done in the majority of cases, owing in part to a misconception of the duties of normal schools, they are compelled to do this academic work in connection with the professional training.

4. That no amount of cramming for County Examinations will make good teachers; but that this interferes, rather, with comprehensive professional acquirements and sound learning.

5. That to teach well requires more than a mere knowledge of the branches, as such, however extended this knowledge may be. That knowledge must be vitalized and exalted by spiritual force and native intelligence before it becomes efficient as an educational agent.

6. That in a professional course for teachers, such as should be established in every normal school, the first thing to be studied is man, in all his possible relations, both as a physical and metaphysical being; also as to his antecedents and history and his possible future.

7. That the various kinds of knowledge or science and all employments and activities must next be studied, or in the same connection, not as an end, however, but as a means for producing an end, to wit: making man what he ought to be.

8. That upon these two great principles or departments of professional knowledge, to wit: Man as an end, and knowledge as a means, the only safe and consistent methods can be established, they being self-evolved, and not superinduced.

9. That the Kindergarten system as developed by Frederick Froebel suggests the true method of treatment for childhood; that the law of self-activity is the only law of harmonious development; and that the same principles and practices so efficient here can, with variations to suit age and circumstances, be carried into every school and college in the land.

EDUCATION IN ICELAND.

The correspondent of a Swiss journal thus writes as to this subject: "One would certainly have no trouble in finding among the corps of teachers some men of great merit, even erudite, whose obscure and modest science is devoted to study, and to the good of their country, without care for renown or the reward of this world. I once asked a young Icelander who undertook the instruction of children who, from the distance of their dwellings or the poverty of their parents, could not attend school. 'At the age of seven years,' he replied, 'all our children know how to read, write, and cipher, among the poorest fishermen of the coast, there is not one who has not received what may be called a good primary education. Our mothers are our teachers, the *boer* (Iceland house) our school-room. The nearest pastor has an oversight of the progress of the children, and that one who does not furnish the proof of a sufficient education would not be admitted to confirmation. An Icelandic mother would not survive the chagrin of seeing her children refused by the pastor, and not a single example is known of it.' Ask the first child you meet who it was that taught him or her the history and geography of their country, the names of the birds and flowers, and the invariable reply will be *Modremi*, my mother. Touching in its simplicity and grandeur, and revealing truly the character of this sympathetic people! At twenty-five the young man is profoundly religious, chaste, gentle, and honest as on the day when at his mother's knee he was spelling out his first lesson. Can one be astonished after this that in Iceland there are neither soldiers nor cannon; that the art of robbing one's neighbor of his purse or his land is unknown; that one sees there no police nor prison; and that for centuries one has lost the memory of every kind of crime?"

METHOD AND DISCIPLINE.

The Rev. C. D. Du Port (Her Majesty's inspector) opened a discussion on this subject by a very interesting and amusing address. His lively manner kept his audience in full expectancy, and his witty sallies were received with peals of laughter. He began by saying that he had much praise to award, and very little blame to remember, of the general discipline of the schools with which he was connected. He spoke not only of the Church schools, but of all the other elementary schools which he visited side by side with them. When he spoke of discipline he did not mean mere absence of disorder, or merely enforced order. He meant this kind of thing (quoting the note to Article 109 in the Code). He was not an advocate for the total abolition of corporal punishment, for one reason, because it was a safeguard against passionate correction. He hated the promiscuous box on the ear, he detested the passionate blow; he valued, in its proper place, the good old-fashioned cane. Let it be honored as the "Court of final judicial appeal," for "familiarity bred contempt." Every time it was used, as Mr. Mundella said, an entry should be made in the log-book. Teachers should not be afraid of the clause in Mr. Mundella's little bill. It only asked them to give the cane judicial dignity as a last appeal, and that its deeds might be emblazoned in future history. Having pointed out that there were other punishments besides the cane, he said that discipline must be more than punitive if it was to create what the Code had expounded as an honorable and earnest school. There must be more than faults checked and punished; there must be training—virtues raised up and developed. Let them aim at the discipline of influence. The very instant the punitive terror was removed, the boy would be over the traces if there

was no other influence at work to prevent a reaction. They must work upon child will, child spirit, child self-respect, child *esprit de corps*, and child gratitude. They must not kill or deaden the boy's spirit, but guide, train, and use it. Their discipline must be a friend to the children—they must play with them, work with them, and work for them; and then they would work with them and for them. Let the children fear, but not them (the masters and mistresses.) Let them fear conflict with them, which was a very different thing. Now as to "method." His opinion was that they now had too much method by half. The danger was lest technical methods learned by training should usurp the place of methodical work—lest method, technically so called, should supersede teaching. Common sense and human sympathy were the two grand methods which never failed. Without them all technical methods were dry and profitless; but, if they worked upon those double lines, their technical methods would prove a vast help. Having cleverly held up to ridicule what he called the "A, B, C," the "form and color," and the "model lessons" mania, he said they ought to feel as free as possible in the use of their technical methods. Let them try to get fun out of the lesson, and correct the children by banter rather than scolding; let them try to forget all their technicalities in zeal, and give their enthusiasm the fullest play. Economy of time was the best method after all. In the question of home lessons he hoped they would show some human sympathy and kindness. Let the children take home their reading-book, and master the sense of a chapter; and let them come in the morning, not perfectly acquainted with it, but ripe to ask questions, and so bring teaching from the teacher. Let the technical methods of their work be their slaves, and not they slaves of them. They should see that the wider methods of life were in full working order. Let their zeal bring into play common-sense plans of every available and varied kind. Let their ambition be to become the successful human trainers of human growth; let them ever remember all that goes to make up human childhood, its instincts, its weakness, its cravings, its ambitions; so should they by sensible, and sympathetic work be, through human children, of lasting benefit to human society.—*School Guardian*.

PRACTICAL EDUCATION.

The perennial demand for "practical" education in the public schools is just now exceptionally strenuous. At a recent conference of teachers and school committees this question was discussed: "How shall we educate our pupils so as to fit them for the practical duties of life, such as farming and the various industrial pursuits?" This is a fair statement of the problem; as it is urged in many quarters.

In trying to solve it, everything depends on the meaning of that short word "fit." If by "fitting" pupils for farming and other industrial pursuits is meant giving them technical instruction in agriculture and the various handicrafts, then it is doubtful whether the public schools can attempt it. It is true that, in some parts of Austria, small "school-gardens" have been established in connection with many of the public schools, in which most of the common grains and other plants of the country are cultivated, the names of which are taught to the children, thus giving them object-lessons in botany, by which they become somewhat familiar with the flora of their own neighborhood and learn something also of the structure and habits of plants. As much as this might be done in connection with many of our suburban and country schools. But this would go but a little way toward fitting boys to be farmers. In the public schools of Boston girls are taught sewing, and this branch of

"practical" education might well be taught in other places. But it is not easy to see how our schools can undertake to give any instruction in the methods of agriculture, or of those other industrial trades by which men and women earn their livelihood.

It might be possible to establish in every considerable town a public workshop, into which boys could go out of school-hours and learn the use of various mechanical tools, under the instruction of a competent mechanic. Most school boys in the cities and larger towns have much spare time on their hands, which might well be put to some such use. Perhaps a portion of the funds provided by taxation for public schools could be profitably expended in furnishing such schools as these. To do this would require legislation in most of the States; but it is open to any benevolent gentleman to offer the boys of his own town such an opportunity. If it should be appreciated and improved, the public authorities might be led to adopt the same plan. Beyond some such simple provisions as these, we do not see how industrial education can be furnished to the pupils of our public schools. The handicrafts are so many, and their methods are so constantly changing, as civilization becomes more complex and the practical arts are multiplied and modified, that it would be quite out of the question to teach them all, even if skilled instructors could be obtained, which is equally out of the question.

Besides, it is hardly the function of public schools to impart any kind of special or technical education. We cannot "fit" boys to be ministers, or doctors, or lawyers, or farmers, or carpenters, or shoemakers; we cannot train girls to be artists in pigments, or in music, or in millinery, or in cookery; all we can undertake to do in our public schools is to train the intellect and develop the character of the pupils so that they shall be intelligent, industrious, contented, and virtuous citizens. It ought to be possible to give the pupils of these schools a mental and moral discipline that shall "fit" them for any calling in life, and not more for one honest calling than for another.

The thing to be first sought, and the thing most often neglected in our public teaching, is the development of a sound character in the pupils. The State cannot teach religion, but it can require its teachers to enforce the virtues of industry, self-reliance, truthfulness, purity, honesty, justice, kindness, and courtesy; it can make the inculcation of these virtues a chief part of the teacher's work. The education that neglects or undervalues morality is worse than worthless; it "fits" the pupil to be a malefactor.

The next thing to be sought is to awaken the minds of the pupils, to stimulate their thirst for knowledge, to train them in habits of inquiry. The successful teacher is the one who makes his pupils think patiently and independently, who stirs them up to original investigation. Any pupil who has had this done for him has been "fitted," so far as his mind is concerned, for success in any calling.

—Selected.

LESSONS IN LITERATURE.

There is one idea in particular that a great many teachers of English literature either partly or entirely neglect. It is the ordinal importance of the three elements in a literature lesson. This importance may be stated as follows:—

1. The subject-matter.
2. The author.
3. The style or manner of composition.

Some will demur to this and say that number three is in itself almost the entire lesson, and is more important in teaching literature than either of the others. But the truth is, the learner's natural

mental constitution seeks the instruction in precisely the order stated, that is, *the thing*; thirdly, *how did he make it*?

Not only is it true with pupils, but with all readers, young and old. For example: We open the book at "The Origin of Roast Pork," by Charles Lamb. The controlling proneness of the pupil's mind is not to be informed about Charles Lamb, nor about the style or dictation or literature of the piece, but to know, first of all, the thing talked about, and then let the other matters come up. So if he is suffered to regard natural chronology in his acquisitions, he proceeds at once to enjoy the relishable account of the burning house and the accidental discovery of the esculent quality of roast pig without a thought of Lamb, or his style of writing. It is to cause such absorption in the reader of what is being said that is the aim of the author, and it may be truly said there can be no adequate appreciation of a writing without this absorption of the subject by the reader. The genius of authorship lies in the ability to create this. Therefore, an intelligent appreciation or understanding of *what* is written is the foundation of the literature lesson; the investigation of *who* wrote it and *how* it was done are subsequent.

This much I offer in opposition to the teacher who would, for instance, insist on the pupil's learning a biography of Charles Lamb, and an elaborate analysis of his literary characteristics, preparatory to an attack on his "Origin of Roast Pork."—*N. Y. Sch. Jl.*

DISCIPLINE.

Never threaten, or scold. Never say, "John, if you don't stop that I shall punish you severely." Or, having been so unwise and hasty as to declare an intention to punish, do so. Your failure to carry out your threat will convince the children that you are infirm of purpose and untruthful, and they know by instinct that weakness or falsity can be imposed upon by the daring or disorderly with impunity. Scolding and fretting and impatience are also indications of weakness, and the child who is not tempted by them to trespass on rules afresh is a very exceptional child, indeed.

The general rules of discipline may be varied somewhat for the different classes of children found in different localities, but the qualities they demand in the teacher are in the main always the same. Firmness is needed, also kindness, and absolute self-control. "Let your yea be yea, and your nay, nay." Mean what you say, and say what you mean. Seek for a wise and temperate theory, and follow it up with a sensible, consistent practice, and the probabilities are that your difficulties in disciplinary work need no longer imperil your happy success.—*Present Age.*

A consistent advocate of the present unphonetic, irregular style of orthography writes a long letter in defence of the method, and the following is an extract:—*Yough kumplein uv psighlent leththerz. Inn yewer igknowrunts, yue phale to purseeve thatte wie haph know cylunt letters. Awl thoughts whitch ue kawl sough arr mierleigh kompowntu parrits oph buy-litterhal, or try-littorhal, or multi-littorhal karrhacurtz yewzd too denought cypal vokle elemence. Two illstraight. Thayr iz ay vokle elemunt kommunley rreprezentid by thea karuktur u. Butte thysae iz ekwallie rreprezentid buy ue, eu, ew, ui, ugh, ough, etc., etc. Ay nuther iz rreprezentid buy t; butte yt haz az ekwiphaylunt th (az inn thyne), tw (az inn two), and phth (az in phthistic). Ai taurd, rreprezentid buy f, haz atte least won buy-littorhal ekwivaylent, ph. Nou appligh theeze prinsipuls too thie spellynge oph ai wurred kombignung awl theighr phokle elemense, anned knowtiss thoe bewtful varhietee they opphur two ower chawiss. Wee maigh haph freat, or fruet, or frughth, or phriewth, or phroughphth. Inn vue ov possighbilitiez souch az theeze, whitch ey dough naut preethend tou eggsaust, amme ei naut joustyphyde inn saighing, "Heer's writchness" ?—*Globe.**

"Canada School Journal" given away for 1884. See Special offer.

Notes and News.

ONTARIO.

A new business college under the management of Bannister's management has been opened in Brockville.

The gentlemen who have been appointed to the Fellowships in University College have entered upon their duties. They are:—Classics, J. C. Robertson and H. R. Faircloth; mathematics, J. W. Reid; physics, T. G. Campbell; mental science, A. S. Johnston; French and German, J. S. Squair; biology, F. McKenzie; chemistry, F. P. Hall. These gentlemen are, of course, all graduates of the University.

The friends of the young ladies who have made application to the Council of University College for permission to attend lectures in the college have submitted the matter to a leading solicitor, with the object of ascertaining whether or not it would be possible to obtain a mandamus compelling the Council to admit the ladies. A decision will probably be arrived at shortly. In case it be not favorable an application for relief will be made at the coming session of the Legislature.

The *St. Hyacinthe Courier* of a recent date says:—"We learn with pleasure that a Commercial College has just been started at Sorel. It is this kind of college that is needed in our sister town (Sorel), for we certainly have in our province classical colleges enough to answer the wants of our population for a long time to come. It would be a mistake to multiply them further, as our people justly complain that the liberal professions are overcrowded, whilst persons desiring to go into trade or manufacturing industries here have not sufficient facilities to acquire the necessary education."

In February last the authorities of the Kingston Collegiate Institute engaged Mr. R. Meek, a phonographer, to give lessons in shorthand, and a class of twenty-six was very shortly after formed. So successful was this new departure that it was determined to add telegraphy to the studies of those who wished to obtain a purely commercial education. This has been done, and a room has been fitted up with all the apparatus necessary for teaching the art in a thoroughly practical manner. In Toronto these most necessary arts can only be learned at considerable expense, and at independent places of instruction having no connection with the Public Schools or Collegiate Institute.

On Friday, 21st September, the pupils of Rockvillage Public School received their first visit from their new inspector, Mr. Smirle. He spent the forenoon in examining the classes present on the various subjects taught, and the pupils were highly pleased with the kind, winning, searching tact he displayed in finding out what they understood of their studies and what progress they had made. At the close of the examination he expressed himself satisfied with the pupils' attainments, especially as many of them present were very young; he was pleased with their appearance of neatness and general good behavior. He expressed a hope that they would so persevere in their studies as to show good improvements on his next visit about the first part of the New Year. He commended the intelligent zeal shown by the people of the section in having erected and so well furnished so good a school house, and he hoped that the pupils would show their high appreciation of the privileges they enjoyed by working hard to obtain a good education.

The numerous friends of G. A. Chase, M.A., formerly of Galt Collegiate Institute, will be pleased to learn that he has been appointed head master of the new High School recently founded at Kidgetown. The building is a very good one, the school begins under the most favorable auspices, and is located in the midst of a rich district, well supplied with efficient public schools; and with such a master as Mr. Chase and Mr. Sinclair, an experienced teacher, as assistant, it is not risking very much to predict a prosperous career for this new High School.

The friends of secondary education at Petrolia are marching on in the direction of a new High School. The preliminary steps have been taken, and we understand that the department looks favorably on the project. The probabilities are that the school will be in full working order before many months elapse.

The new professors of chemistry and apologetics and New Testament criticism in Queen's University, Kingston—Messrs. Goodwin and Ross—were duly installed on the 16th ult. Prof. Ross delivered the inaugural. Subject—"Physical Science and the Possibility of Miracles."

The Ottawa papers give an account of Dr. McLellan's official visit to that city as Director of Normal Schools. The address to the students was in the learned doctor's best style, deeply interesting and thoroughly practical. In forcible language he pointed out the importance and dignity of the teacher's calling. The benefits arising from the professional training received in our Normal Schools were dwelt on in his usual impressive manner, and his whole visit was a stimulus and an encouragement to the students.

A St. Thomas paper has the following sensible remark:—"The demand for good teachers is scarcely met by the supply. One would suppose the large number of candidates would render the profession crowded. It is not overstocked, and the prospects indicate that next year will see a scarcity in this part of the country. In Elgin several teachers intend, we understand, to give up the business at the close of this year and turn their attention to other lines. Trustees, who desire to get good teachers would be wise in engaging in time. By putting off the matter too long last winter some schools in parts of the Province were vacant quite a while. It is not hard to find in what the difficulty consists. The remuneration, though sufficient to induce many to enter the profession, is not high enough to make many make it their life-work. There is not a fair discrimination made between the experienced and the inexperienced teacher. Under such circumstances we may expect young men to make teaching a stepping-stone to other professions. The desire for economy in public expenditure is highly commendable. The desire for so-called cheap teachers results very often in extravagance of the worst kind. The poor teacher is dear at any price; the one who has already earned a character for efficiency should, if possible, be retained by the section."

Wellesley School, Toronto, was the scene of some disturbance on the morning of Oct. 8th. It appears that some of the chimney flues became stopped up, and the school-rooms were filled with smoke so densely that some of the children were much frightened. Mr. McDonell, the head master, found it necessary to dismiss some of the rooms, and he had considerable difficulty in preventing a panic and general stampede among the children. This was, however, averted, and no evil result followed. The cause of the disturbance will be at once removed.

The *Globe* recently published four columns reporting the views of leading educationists on the higher education of women and on the co-education of the sexes. Very little difference of opinion is expressed on the first question. Opinion seems more divided on the second; many of those favoring separate education for ladies point out the advantage of utilizing Upper Canada College as an equivalent to University College, in which ladies may pursue higher studies and have all the advantages of university training.

Mr. Joseph Latter, teacher of Ewesmere Public School, in the County of York, has just engaged for the twelfth year of service with his Board of Trustees. Such instances are so rare that we are pleased to make a note of this one. We congratulate both trustees and teacher, and only wish that this case was the rule instead of the exception in Ontario.

The Lambton Teachers' Association was disappointed of the services of Prof. DeGraff of New York. The effort to secure a good conductor was laudable, but it costs less and produces more tangible results to employ home talent, of which there is a fair supply.

Mr. Charles Peets is teaching at Clearville.

Rev. Robert Torrance, of Guelph, has given a scholarship of \$50 to Knox College.

John Bothwell has engaged to teach the school at Mount Pleasant next year.

East Middlesex Teachers' Association meets on the 16th and 17th of November.

D. S. Skinner, B.A., of Blanshard, has assumed the position of assistant master in the Walkerton High School at a salary of \$750.

In the Kingston Commercial College the lectures on Political Economy, Physiology and Hygiene, and Commercial Law are open to the public.

The next entrance examination to Collegiate Institutes and High Schools will be held Thursday and Friday, the 20th and 21st days of December.

Corinth Public School, under Mr. A. Moss, assisted by Miss Louie Lane, is prospering. A literary and musical entertainment is spoken of.

At the late intermediate examinations Seaforth passed 35; Godrich, 82; Clinton, 34; London, 80; St. Catharines, 58; Orillia, 21; St. Thomas, 63; Stratford, 43; Mitchell, 13; Listowel, 21.

Mr. D. P. Clapp, inspector of schools, North Wellington, has laid before the Government serious complaints regarding the action of the Canada Publishing Company's agents to get the Canadian Readers introduced into the schools.

The classics for the junior matriculation in Toronto University for next year are:—Xenophon, B. 2, Homer, Iliad, B. 4, Cicero, Cato Major, Virgil, Eneid, B. 5 (1—361), Ovid, Fasti B. 1 (1—300), and for Honors Demosthenes, Olynthiacs, 1, 2, 3, Homer, Odyssey, B. 9, Livy, B. 9, chaps. 1—19, Horace, Odes, B. 3, Ovid, Fasti, B. 1 (400 to end).

Mr. Ulysses J. Flach is pursuing the second year's work of the university at the St. Thomas Collegiate Institute.

There is likely to be a scarcity of teachers next year. The number of students this session at the Normal Schools is small.

The Canada Presbyterian of this week contains an interesting sketch of the life of the Rev. Dr. King, whose removal from Toronto to Manitoba is now very near. Dr. King is a native of Yetholm, a pretty little village in Scotland, near the foot of the Cheviot Hills. He matriculated in Edinburgh University at the age of fifteen, and graduated there five years later, with a degree of M.A. He was licensed to preach in 1855 by the Presbytery of Edinburgh. The following year he volunteered to go to Canada to engage in missionary work. He spent a year in this work and then accepted a call from the Columbus and Brooklin congregations, being ordained on the 27th October, 1857. Here he labored until May, 1863, when he received and accepted a call from Gould street church, Toronto, in succession to the late Dr. Robt. Burns. During Dr. King's pastorate here his congregation increased to such an extent as to render the erection of a new church a matter of necessity, and the graceful structure which now ornaments St. James' square was accordingly built, costing, together with its site, \$54,000. It was opened on the 17th November, 1878. Dr. King has gained the reputation of being a most faithful pastor and an indefatigable worker; he has been a devoted friend to the educational institutions of his Church, and has done much to promote the welfare of the students. During the present year, the Church elected him Moderator of the General Assembly of Canada, the highest position in her gift, and at the same session called him to the office of Principal and Professor of Theology in Manitoba College. This call he has accepted, to the universal satisfaction of the Church, but to the deep personal regret of those with whom he has been connected in Toronto. At the farewell meeting which was held in his church on Monday evening, October 22nd the Hon. Oliver Mowat presided, and Rev. Dr. Cochrane attended on behalf of the Home Mission Committee. Dr. King's induction in Manitoba College took place on the 31st ult.

In the case of Dunn v. Board of Education of Windsor, Judge Ferguson delivered judgment yesterday upon the application made a week or two ago for a *mandamus* to compel the school trustees of the town of Windsor to admit the daughter of one Dunn, a colored citizen, to the Public Central School in that town. It appears that there are three Public Schools in Windsor, the one in question, a Separate School, and a Colored School. Mr. Dunn alleges that the head master, Mr. Duncan, refused his daughter admission to the Central School on account of her color, and that he then applied to the trustees at their regular meeting on the 4th of September last, who also refused it. The grounds of the refusal as stated by the Board of Trustees were two, that there was no room for the girl in the Central School, and that in Mr. Dunn's application he did not proceed in the proper way as laid down by the school regulations in full. He should have applied to the inspector to have his daughter transferred from the Colored School, where she was an attendant during the previous term, to the Central School. Minute evidence was given to his Lordship as to the exact amount of desk accommodation in the school, and he came to the conclusion that the defendants' refusal on that ground was justified, as also upon the other ground. The judge further remarked that it did not appear that the reason for the refusal to admit Miss Dunn was her color, or that that reason was assigned by Mr. Duncan or by the trustees. He accordingly refused the *mandamus*, and expressed the hope that the school trustees would not press for costs. — *Globe*.

What are you going to do, brother, to extend the circulation of your professional journal?

GENERAL.

St. Louis again claims to have found a way out of her trouble. The Supreme Court decision prohibits the expenditure of money for the education of children under six years of age. This endangers the continuance of her public kindergartens, of which she is justly proud. For a time children were received without being questioned very closely concerning their age, but this furnished little relief, and was not very honest. Now the following rules are offered as a remedy:—

"Children shall be received into the kindergarten a half-day only at the age of six years. Children may be received into the kindergarten a half-day only at the age of five years, upon payment of tuition at the rate of \$4 per year, payable quarterly in advance.

"In those schools to which kindergartens are attached, no pupil shall be admitted to primary instruction until he has reached the age of seven years. In those schools having no kindergarten, pupils may be admitted to primary instruction a half-day only at the age of six years, if vacancies exist after the other children have been accommodated.

"Pupils who have reached the age of seven years shall be admitted to primary instruction all day, but no child shall be permitted to attend the kindergarten during one-half of the day and the primary school during the other half of the day.

"These regulations shall not prevent those pupils seven years of age, or older, whose parents so desire, from receiving instruction for a half-day only, either in the primary or kindergarten department."

It will be noticed that these rules also do away with the reprehensible practice of instructing one half-day in the kindergarten, and the other half day in the primary school. The rule is an improvement, although it will not help the matter if the \$4 tuition should be insufficient to pay the expenses. And if this fee should be sufficient, we see no reason why this offer should not include children four years old.

EDUCATION IN LOUISIANA.—*The Schools Closed for Want of Funds.*—A special despatch to the eastern press says that to-day there is not a Public School open in all Louisiana. Hon. E. H. Fay, State Supt. of Public Schools, in explanation of the situation, has written a letter, addressed to Ben. P. Edmunds, president of the School Board at Sparta, La., and says:—

DEAR SIR: Your favor of the 6th inst. reached me only last night, and I hasten to reply. You say people are constantly inquiring of me why they cannot have Public Schools, and ask me to state the reasons. This I will now do in as few words as possible. First, the General Assembly of 1882 made little or no provision for their support, appropriating only \$107,000, all told, from July 1, 1882, to July 1, 1883, never before having appropriated less than \$300,000 since the Public School system was first established. Out of this aforesaid amount they unconstitutionally appropriated \$30,000 per annum for two years to three universities, one at Baton Rouge and two at New Orleans. Your superintendent enjoined this payment, but was non-suited, the Supreme Court holding that he had no right to protect the interests of the Public Schools, even though he did it at his own personal expense. The apportionment of the State Superintendent, made Feb. 24, 1883, of the funds of 1882, was enjoined by the city School Board of New Orleans, because they were not given so much as the parishes were. Owing to an error in reporting "funds on hand," the June apportionment of 1882 had to be cancelled, but New Orleans had succeeded in drawing some 22 *per capita* cents of educable children—some \$13,000—before the error was reported at the superintendent's office. True, this over-draft of New Orleans was out of the funds of 1881, and would never be collected to pay the rest of the State 22 cents *per capita* held up from New Orleans funds of 1882, and apportioned to the rest of the State, to make up the amount in July, 1882, by New Orleans. New Orleans claims that, notwithstanding the over-draft of the fund of 1881, she is entitled to a *pro rata* share of the funds of 1882; hence the injunction restraining the auditor from issuing warrants on the funds of 1882. The case was decided in the lower court in favor of the State Superintendent, and was appealed by the attorneys of the New Orleans School Board, returnable in February next. Your superintendent has proposed that if they will relieve those funds already apportioned from their injunction, and allow them to be paid out to the State, he will hold up from the appropriation sufficient to satisfy their claim. If it is decided to be a valid one by the Supreme Court in February, 1884, but he can get no reply from them. Your superintendent has exhausted all means in his power to give what little appropriations have been made to the Public Schools of the State.

The effect of this litigation, it is said, has been to close the doors of every Public School-house in the State, outside of the cities, and there is no prospect of their opening again until after the State election of April next.

The Philadelphia *Bulletin* says:—"It is a very remarkable fact that speaks badly for our vaunted progress in the science of education, that almost nothing is taught in the schools of the present day. They are simply recitation rooms, where children go to repeat the result of laborious study and instruction at home. The school proper is at home, and the parents are the teachers. The amount of labor that our modern school system throws upon the parents of the scholars is as intolerable as it is wrong and unreasonable. In many families the evening circle is simply a drudgery over the teaching and learning of lessons, often so badly adapted to the capacity of the pupil, to be learned from text-books so ingeniously contrived to "darken wisdom with words without knowledge," that parent and child are alike incapable of mastering their difficulties. Hours that belong to domestic recreation and enjoyment are thus converted into hours of weariness and vexation.

Miss Howard, an American lady, is one of the most distinguished physicians in China.

Dartmouth College is to have a new chapel, to cost \$30,000. Work will begin on it in the spring.

Miss Fuller is a school teacher in Grand Marais, Northern Michigan. She is also an admirable shot with the rifle, and after school hours goes hunting in the neighboring woods.

The University of Zurich has now thirty-one women students, of whom only seven are German. Twenty of these ladies are studying medicine, ten philosophy, and one chemistry. Zurich has conferred the doctor's degree on thirty women during the ten years, during which the university has been open to both sexes alike. Twenty-three of these were doctors of medicine; the remaining seven had the Ph. D. degree.

The comment is made that Mr. Mulhall, the eminent English statistician, suggested remedies for suicide are really preventives of insanity. He tabulates them somewhat as follows:—1. To abolish the duty on coffee, which is the greatest foe to intemperance. 2. To open museums and galleries on Sunday afternoons. 3. To forbid marriages between cousins, under penalty of paying double the ordinary poor rates. 4. To imitate Mr Peabody, as far as possible, in erecting suitable workmen's tenements. 5. To recommend less high pressure in schools.

Mrs. Mattie Booth, a coloured woman, has opened a school for women in her husband's parish in Selma, Ala. In the three months of the school, she has welcomed forty who were unable to go elsewhere. She writes, "One old woman, seventy-five years of age, came tottering in with her primer. A younger pupil said, 'Why, Sister Grant, you are too old to go to school.' 'I know,' she said, 'my time is almost out here, but I would like to learn just to spell the word God; then I shall be satisfied.'"

At a school examination a clergyman was descanting on the necessity of growing up loyal and useful citizens. In order to give emphasis to his remarks, he pointed to a large flag hanging on one side of the school-room, and said:—"Boys, what is that flag for?" An urchin who understood the condition of the room better than the speaker's rhetoric, exclaimed:—"To hide the dirt, sir."

An interesting experiment is being tried at Bowdin College. The president and a jury selected from the students try all offenders against college discipline. The jury is composed of one representative from each class, one from each inter-collegiate society, and one from non-society students. The president is the judge. He awards the penalties. Two verdicts are brought in—one of fact, the other of opinion. The former must be unanimous. The latter is determined by a majority vote. Four grades of offences are recognized, and corresponding penalties annexed to each. The president has no right to award any other penalty than the one attached to the particular offence in question.

Out of 780 young men under 21 years of age committed to the Eastern Pennsylvania Penitentiary during one year, 765 had no trades, though 772 were graduates of schools. This is a sad commentary on the too prevalent notion both of youths and parents that the only respectability and all the opportunities for individual advancement are in the kid-gloved pursuits. Young men roughly jostled out of the over-crowded professions and genteel employments find themselves utterly unfit for anything useful, and in too many cases turn to crime as likely to afford the most satisfactory returns. It is not the fault of education; it is the fault of the unfortunate social tendency of the times, which so seriously discriminates against legitimate labor, and falsely elevates white hands and good clothes and empty heads and pockets.—*Globe*.

Readings and Recitations.

TO THE TEACHER.

"Treat the children fairly, kindly,
Lead them gently on their way,
Let them feel the power of sunshine,
As they toil from day to day.
Make their labors happy, pleasant,
Win them by the love of truth;
Lure them on by sweet incentive
O'er the slippery paths of youth."

BENJAMIN FRANKLIN.

This man, who became so famous throughout the civilized world, was born at Boston, Mass., on the 17th of January, 1706. His father was a dyer and soap chandler. At the age of eight years he was sent to a grammar school to begin his education for the Church. Before he had made much progress he was taken home to assist his father. Being the fifteenth of seventeen children, it is probable that but for his ambition and indomitable perseverance he would have remained a soap boiler, and thus would have been lost to America the fame of having produced the man who first learned to utilize lightning. Finding the boy so dissatisfied with his present employment, his father apprenticed him to his brother James, who was a printer. While learning the trade of printer he formed acquaintances from whom he borrowed books.

His thirst for knowledge was so great that he often read all night in order to return books which he would borrow one evening to be returned the next morning. About this time he indulged in writing poetry, but soon became convinced that the paths of poetry were not for his feet. He began to argue with a young friend who was also fond of reading. These disputes were often written, and he found himself inferior to his friend in style and diction. To remedy this, he read articles from the finest writers, and soon found himself greatly improved; so much was he encouraged that he hoped to become a great writer. Many and great were the obstacles before him, but he had the will and pluck to persevere. His brother's treatment had ever been unkind, and he decided to leave him. He had lived in a very frugal manner, in order to have money to buy books, a part of which he now sold to get money to enable him to seek employment in other cities. After failing in Boston he proceeded to Philadelphia, where he landed a stranger, worn and hungry, with one dollar and a few coppers. Out of this he paid his passage and bought some bread, which he ate as he wandered up and down the streets in search of employment. Miss Read, who became his wife years afterward, saw him from her father's door, and said he presented a very ridiculous figure, walking munching from a loaf of bread, and carrying one under each arm.

But he did not remain obscure. His industry, morality, and frugal habits soon brought him friends. In 1724, by the advice and promised assistance of friends, he went to London, expecting to set up in a business for himself. As is too often the case, the friends forgot to lend the promised aid, and he was thrown on his own resources.

His temperate, frugal manner of living was the means of doing a great deal of good. His companions abolished the mug of beer and other harmful things from their meals, and by simpler fare were enabled to save health, morals, and money. Soon after this he published his celebrated almanac called "Poor Richard's Almanac," which was full of valuable moral maxims which have since been collected in a little book called "The Way to Wealth." In 1736 he was appointed clerk to the General Assembly, next postmaster, then alderman. He also began to give great attention to public schools, hospitals, and other measures for the good of the people. He proved the identity between lightning and the electric fluid. By means of a kite string and key he drew lightning from the clouds, imprisoned it in a vial, and gave to the world a power which has since been made so useful. He had become a great philosopher and statesman, visited kings and courts, received

medals, was elected honorary member of societies, and received honor everywhere. What a contrast to the dirty little printer who walked the streets of Philadelphia, eating bread while he sought employment that would enable him to buy more when that was gone!

He was a man that read practical lessons of life from the most commonplace incidents. We give the following in his own language:—

When I was a little boy, I remember, one cold winter morning, I was accosted by a smiling man with an axe on his shoulder. "My pretty boy," said he, "has your father a grindstone?" "Yes, sir," said I. "You are a fine little fellow," said he, "will you let me grind an axe on it?" Pleased with the compliment of "fine little fellow," "Oh, yes, sir," I answered, "it is down in the shop."

"And will you, my man," said he, patting me on the head, "get me a little hot water?" How could I refuse? I ran and soon brought a kettleful. "I am sure," continued he, "you are one of the finest lads that ever I have seen; will you just turn a few minutes for me?"

Pleased with the flattery I went to work, and I toiled and I tugged till I was almost tired to death. The school bell rang, and I could not get away; my hands were blistered, and the axe was not half ground.

At length, however, it was sharpened, and the man turned to me with, "Now, you little rascal, you've played truant, be off to school or you'll rue it!"

"Alas!" thought I, "it is hard enough to turn a grindstone, but to be called a little rascal is too much." It sank deep into my mind, and often have I thought of it since. When I see a merchant over-polite to his customers, methinks "That man has an axe to grind."

When I see a man who is in private life a tyrant flattering the people and making great professions of attachment to liberty, methinks, "Look out, good people! That fellow would set you turning grindstones!"

Boys, you who are destitute of the many advantages of worldly possessions that others seem to possess, should not become discouraged, but set your mark high up on the ladder of fame and honor. Many mountains that seem insurmountable will rise before you, but with the perseverance of a Franklin, you may scale their very peaks, and reach high and verdant fields beyond.

Let his maxim ever be fresh in your mind—"He who is diligent may some day stand before kings."—*Southern School Journal.*

A son of St. Crispin having been summoned to appear before a School Board in the Midlands to explain the cause of the irregular attendance of his daughter, sent the following letter:—"To the _____ School Board, assembled in their barbarous imitation of a Gothic Temple. Gentlemen,—Do you as a body claim to be political economists? I trow not, or you would not require me to lose time, which to me is money indeed, to appear before you. Do you as a body set up any pretensions to philosophy? I am doubtful, or you would not require girls to be regularly at school, for most assuredly there must be a time for them to acquire a knowledge of domestic affairs, or how are the ranks of domestics to be filled? Education at school is but a means to an end—that end being life—for all, but for girls there must be education, or its equivalent education, at home. I need not tell you that the London School Board have become really alive to this. Why don't you become a vigilance committee and visit your schools, to see that there are plenty of hat-pegs, wash-hand basins, towels, &c., and so teach ORDER, which is heaven's first law; and cleanliness, which is godliness? This in my opinion would be more commendable than spending postage stamps in badgering the industrious poor, who should be allowed some discretion over the juvenility days of their children. I never heard of School Boards interfering with the four months' holiday per year of the sons of beef eaters. Why don't they send them summonses and say, BRING THIS WITH YOU? Bring this with you. Great heavens! You ought to deliver yourselves up to Her Majesty's Privy Council and take lessons in common politeness. I feel awfully insulted; however, I promise to send the girl to school to day.—Gentlemen, yours obediently, — — —"

THE TEACHER'S MISSION.

Delightful task! to rear the tender thought,
To teach the young idea how to shoot,
To pour the fresh instruction o'er the mind,
To breathe the enlivening spirit, and to fix
The generous purpose in the glowing breast.

—Thompson.

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.

ARTHUR.—The first meeting of the Teachers' Association of Arthur Township was held June 19th, at the Kenilworth Public School. Present—Mr. Clapp, the Inspector, Misses Ghent, Sparks, McTaggart, and McGillicuddy, and M. Corbett, A. Allen, G. P. Allen, A. Hellyer, and T. A. Brough, besides the trustees and pupils of the school. Mr. Corbett was appointed chairman, and Mr. Brough secretary. Classes in Reading, Writing, Arithmetic, Literature, Grammar and Geography were taught by the teachers present, twenty minutes being allowed for each class. When the pupils had been dismissed for the day, Mr. Brough read a paper on "How to Construct a Time-Table," and exhibited the one used in his own school. Mr. Corbett, in a paper on "How to Secure Regularity of Attendance," advocated merit-cards, plants in the school room, and flowers and shade-trees in the yard. While discussing the above subject, one of the trustees present said that the Government should appoint an officer in every district to enforce attendance, and should not expect trustees to have their neighbors fined. After a vote of thanks to the chairman, friends, and visitors, the association adjourned to meet in the same place next year. The work done was practical in its scope and the teacher's manner in dealing with each subject and class was freely criticised; and by this means errors were corrected, and new and valuable points brought out.

WEST LUTHER.—The first Teachers' Convention of this township met on Wednesday, June 20th, in the school-room of S. S. No. 6, Miss Anderson, teacher of the school, being appointed to the chair and Mr. Smith as secretary. The business of the convention was opened by Miss Spark giving a practical method of teaching dictation, her mode of correcting errors being excellent, namely, making a distinction between those in punctuation, capitals, and spelling. The after discussion, especially the remarks of D. P. Clapp, B.A., P. S. I., impressed upon the minds of the teachers the necessity of using written exercises to secure proficiency in this subject. Local geography to second class was then taken up in a pleasing manner by Miss McGeehan. The criticism on this subject was interesting, referring chiefly to the point: "Is it necessary to teach definitions, and, if so, to what extent?" Miss Ritchie then introduced the subject "Numeration and Notation" to second class, which she taught in a skilful manner. In the after discussion Mr. Segaworth, late Deputy-Reeve, while commenting on the simplicity of the explanation and comparing it with the method used in the schools of his youth, gave a good thought in saying that "the old system worked on the principle of the hardest possible way to do a hard work." Mr. Smith commenced the afternoon session with a lesson on the "River System of North America," beginning with the pupils' own ideas about water and its manner of flowing. He took up the great mountain chains and the rivers flowing from them. The mountain system of Europe was then ably taught by Mr. Lipton. His method, which was that of drawing an outline map on the board and filling it up as the lesson proceeded, rendered the work interesting and instructive. A short essay on "Uniform Promotion Examinations" was then read by Mr. Smith. The essayist dwelt chiefly on the improvement in attendance, in interest, and in the thinking faculties of the pupils resulting from the examinations. After several suggestions as to changes in examination regulations, made by our efficient and observing inspector, had been agreed to, Miss Spark favored the convention with an essay on the correct keeping of registers, dwelling especially on accuracy and neatness, and bringing out the thought that well-kept registers should be a teacher's pride. It was moved by Mr. Smith, seconded by Miss McGeehan, that the thanks of this convention be given to Mr. Clapp for the valuable hints which we, as teachers, have received from him during the exercises of the day. Carried. After a vote of thanks had been given to the chairman, secretary, and other members who had assisted in the entertainment of the day, the convention adjourned.

EAST AND WEST LAMBTON.—A union meeting of the East and West Lambton Teachers' Association was held in the Methodist school-room, Sarnia, on Thursday and Friday, 20th and 21st September. There was a large attendance of teachers from both divisions of the country, but considerable disappointment was at first experienced owing to the failure of Professor DeGraff to be present, although Professor Houston, who came to take his place, proved to be an able man in the line of work, and added something to the success of the meeting. The meeting was called to order at 9 a.m., John Brebner, president, in the chair. The meeting was opened with prayer by Thomas White. Mr. Brebner gave an opening address, stating the difficulty under which the association was laboring owing to Professor DeGraff not being present, after which Mr. Barnes explained how he would teach mental arithmetic. A

discussion followed in which Mr. Maxwell, Inspector for South Essex, and several teachers took part. Mr. Donaghy then gave an address on letter-writing. The discussion which followed related chiefly to the best methods of teaching this subject. After recess Mr. A. A. Clappe and a choir of teachers kindly consented to give several selections of music. Mr. W. S. Howell next explained how he would teach addition and subtraction to classes beginning the study of those subjects. The discussion on this subject concluded the forenoon session. *Afternoon Session.*—The meeting was called to order at 2 p.m. Mr. D. D. Moshier exhibited his method of map drawing, taking the map of South America as an example. Various opinions regarding map drawing were advanced by different teachers, and at the conclusion of the discussion it was announced that Prof. Houston would give a selection of readings and recitations. The Professor then in a very able manner recited three different pieces, much to the satisfaction of those present. The programme was then resumed by Mr. J. R. Brown, who discussed English grammar, dealing with the verb. The methods of distinguishing the different inflections, &c., were explained by means of examples written on the blackboard. A lively discussion followed the introduction of the subject, after which the matter of an evening session was considered, when it was decided to have an entertainment in the Town Hall at 8 o'clock. The entertainment in the evening consisted of readings and recitations by Professor Houston, music by the choir, and solos by Misses Morrison and Dickey, and Mr. T. Smith. It was a complete success, everyone appearing to be thoroughly satisfied with the proceedings. At the close a vote of thanks was tendered those who assisted at the entertainment. *Friday.*—Meeting called to order at 9 a.m. It was decided to proceed with the discussion of the new text-books. After a lengthy discussion of the merits of the two series of Readers authorized for use in our Public Schools, it was moved by Mr. D. Sinclair, seconded by Mr. Graham, That this association recommend to the Inspectors and School Boards throughout the county the adoption of the readers published by Gage & Co., as the best adapted to meet the wants of our public schools. Carried. Wm. Sinclair, B.A., then gave an address indicating the method he would pursue in teaching history. After a short discussion on this subject the association adjourned till 1.30 p.m. *Afternoon Session.*—Meeting called to order at 1.30 p.m. Prof. Houston then gave an address on "Reading to Junior Pupils." His remarks on this subject were of a thoroughly practical and interesting character, and appeared to fully enlist the approval and sympathy of the teachers present. Dr. McLean then delivered a carefully prepared lecture on "Health in the School-room." The lecture clearly set forth the necessity of proper attention being paid to cleanliness, thorough ventilation of rooms, etc., and at the close the lecturer was tendered a hearty vote of thanks for the valuable instruction which he had given. Prof. Houston next being called upon recited "Lady Clare" and two other pieces, which were listened to with rapt attention by the teachers and others who were present. The last subject on the programme, viz., "Tardiness," was discussed by Mr. Thos. White. The various plans he would adopt to remedy this defect were pointed out, and at the close of his address a general discussion followed, in which several teachers took part. By the kindness of Messrs. McDonald and Donagh we had the pleasure of meeting Prof. Houston, whose readings were so highly appreciated by the Teachers' Association. Mr. Houston is a Professor of Elocution from New York, who very kindly consented to come to Sarnia instead of Prof. DeGraff. The Professor's readings were both pathetic and humorous, and were rendered in such a style as those only who have given elocution a great deal of study can. His rendering of Phil Blood's Leap, a Passage in the Life of Mr. Gabriel Parsons, Giving Away a Child, The Pin, and Our Boy—a bachelor's opinion with it, were his masterpieces, and were very warmly received. The Child's Prayer, The Ride of Collins Graves, and Love in a Balloon, were also well received. Moved by Mr. Thos. White, seconded by Mr. McDonald, that the teachers of the County of Lambton tender their hearty thanks to the people of Sarnia for the kind manner in which they have been entertained while here. Carried. Moved by Mr. Barnes, seconded by Mr. Brown, that the thanks of this association be tendered to the trustees of the Methodist Church, Sarnia, for the use of the school-room in which to hold our meetings. Carried. The arrangements for time and place of next meetings were left with the Executive Committees of the respective associations. The meeting then adjourned at 4.30 p.m.

NORTH WELLINGTON.—The annual meeting of the North Wellington Teachers' Association was held in Drayton on the 4th and 5th of Oct., 1883. After the reading of the minutes, a reception committee was appointed to introduce the members to each other. The President, Mr. Westervelt, gave an opening address which the association desired should be published. An essay on "Temperance in School" was read by Mr. Geo. W. Wait in which he advocated the power of the teacher's own example. The president said the moderate drinker did the most harm. It was moved and carried that if the funds of the association would admit, a copy of Dr. Richardson's Manual on Temperance should be placed in the hands of every member. Drill with class, by Mr. W.

McEachern, gave rise to some discussion, as it was connected with school discipline. The treasurer reported finances good. A misunderstanding about sending books to members was removed by a motion passed. It was moved and carried that 2,000 copies of Mr. L. B. Davidson's essay entitled "Common People vs. Common Schools" should be printed for distribution. Mr. R. W. Bright, of Drayton, is president and Mr. Wm. McEachern of Harriston secretary for the ensuing year. It was moved and carried that the secretary shall receive \$15 for next year's service. Mr. John E. Bryant's essay was read by James McMurchie, B.A., H. M. Harriston High School. After some discussion the following motion was moved:—"Moved by Mr. McMurchie, seconded by Mr. Shields, B.A., and resolved, that although this association does not consider the present system of a responsible Minister of Education free from objection, yet believe it to be preferable to that of a Chief Superintendent and Council of Public Instruction as proposed." Carried. Readings, music, and songs were on the programme. The association adjourned to meet next year in Harriston. On the evening of the 4th an entertainment was given; the proceeds were for the benefit of the association; the fund in future will be used to pay the secretary. The lecturer of the evening was Prof. J. Mills, B.A., of the Model Farm, Guelph. He thought that more attention should be given to the study of English in our Public Schools, and that the teaching of agriculture should be compulsory.

REVIEWS.

ELEMENTS OF THE DIFFERENTIAL CALCULUS, WITH EXAMPLES AND APPLICATIONS. By W. E. Byerly, Ph.D. Boston: Ginn, Heath & Co.

ELEMENTS OF THE INTEGRAL CALCULUS, WITH A KEY TO THE SOLUTION OF DIFFERENTIAL EQUATIONS. By W. E. Byerly, Ph.D. Boston: Ginn, Heath & Co.

Until very recently all the mathematical text-books published in the United States had the appearance of having been written by school-boys, or at best by rural "Philomaths;" so few indeed were the exceptions that they might almost have been reckoned on the fingers of one hand. But there are signs of a change, of an awakening to a fuller and better knowledge of mathematics and of mathematical instruction. One of these signs is the appearance of the works named above. Mr. Byerly announces that his books are "intended for text-books, not for exhaustive treatises," and as text-books they must be judged. As works on the calculus considered as a branch of pure analysis they are not so full nor, so far as they cover the same ground, so complete as those of Williamson or of Todhunter, much less those of Schloemilch or of Houel, but we know of no books better suited to the wants of those students who seek in the calculus an instrument for investigation in applied science, a guide and director in physical research. Indeed, the needs of such students would seem to have been specially kept in view in the arrangement of the first volume and in the selection of the examples and exercises in it, as also in the addition to the second volume of a chapter which contains what is called a "Key to the Solution of Differential Equations." As an author Mr. Byerly, who may be classed as belonging to the Duhamel School, exhibits all the accuracy of development, the precision of statement, and the clearness of exposition of the best French writers. It is only due to the publishers to add that the paper, composition, and printing are all excellent.

Scene—A western high school; subject history—trial of the bishops. See Collier's British History, p. 242. Student recites (giving exact words of text-book), "That night was a blaze of illumination. Rows of seven candles, with a 'taller' one in the centre for the Archbishop, lit up every window, &c." Student interrupted by vociferous applause, but cannot comprehend the reason.

VARIETIES IN ENGLISH SPEAKING.

There was an old fellow in Guinea,
He had a big daughter named Muinea;
She fed curd to the cows
And hay to the sows,
Oh! how could she be such a nuinea?

An old yellow dog in Cologne,
Ran away with an old woman's bogne,
But the watchin old crogne,
Hit him twice with a stogue,
And 'twas dreadful to hear the dog grogne.
—Burlington Hawkeys.