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THE ONTARIO TEACHER:

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EDUCATIONAL INFLUENCES OF OUR PUBLIC SCHOOLS.

It is a common mistake to regard our Public Schools as calculated to do nothing more than to impart to our young population the rudiments of an English education. Doubtless this is ostensibly their main design, and ordinarily considered the Alpha and Omega of the teacher's work. There are, however, other purposes which a Public School serves, fully as important to the scholar as the mere reception of rudimentary knowledge. That these influences are by many regarded as subsidiary does not by any means detract from their importance. The acquisition of knowledge is at best to many but a receptive process. Facts, dates and theories are stored away, to be used when occasion requires. But in the acquisition of this knowledge there are other influences at work. The scholar is under training. It is not simply that his mind is developed by the information imparted, but he is forming *habits*, by which the powers of the mind are to make themselves felt in after years. And it is this part of Public School Education that is

so often overlooked both by parents and teachers. Let us briefly consider these influences:

1. DISCIPLINE.—Much of the peace and well being of society depend upon the recognition of constituted authority. Discipline, to be effective, must commence at home. If so begun and properly maintained at school, we have the best guarantee of national peace and order. To the scholar the rules and regulations to which he is required daily to conform are similar in their obligations, restraints and consequences, to those laws which regulate in after years his conduct as a citizen. If he learns to respect the former obedience, the latter will be an easy matter. The early curbing of all disposition to lawlessness and rebellion—the experience that violations of established rules will be followed by certain pains and penalties, the comfort which is to be found in a hearty compliance with established usages, all tend to cultivate those *habits* of fealty and respect for law, without which government would be a matter of

impossibility: It follows then that when discipline is neglected—when the authority of the teacher is not duly respected—when anarchy and disorder prevail at school, then the seeds of incipient rebellion are being sown, and that a young generation is being reared whose future career will, in all probability, be one of lawlessness and opposition to the amenities of society. The central principle of all government is obedience. Indeed there can be no government without it. And altogether, thus apart from the mental pabulum received by the scholar, the training which he undergoes in being obliged to surrender his own will to superior authority, is constantly fitting him for discharging those duties to the commonwealth which are expected from every citizen.

2. CHARACTER.—The formation of the pupils character is to many teachers' a matter which has not for one moment engaged their attention. They are utterly unconscious of the fact that every hour the character of those under their care is being formed, and that every lesson taught exerts an influence in the formation of that character. If to be industrious is a virtue, then industry should be taught. Its importance should be enforced both by precept and example, and the scholar should be made to feel that when he is contending with difficulties, and ever so slowly attaining the mastery over problems, that he is laying up stores of strength for future conquests. To him, however, the simple mastery of the difficulty itself might appear the greatest conquest, but to the teacher and to society, the value of the victory consists of the de-

velopment of the scholar's character. The far-seeing teacher sees fresh conquests springing out of this victory. He sees the scholar as now a man grown, battling with the difficulties of life, endeavoring to make for himself a position in the world—he sees him baffled time and again, but still he struggles on. He remembers how by perseverance he achieved victories in the past, and knows that there is virtue in indomitable pluck. His own power has made him a conqueror before, and so it will again, and thus animated by an experience which formed part of his early training, he goes on to win success where others fail.

It is by the operation of such influences as lay the foundation for future usefulness that our Public Schools deserve the prominence they receive. We do not say but the amount of knowledge actually imparted is a fair equivalent for the money and labor expended, but we do say, that by surrounding the scholar with such influences as will form correct habits, and give a purer bent to his character, the scholar himself is fitted for discharging the duties of citizenship, and achieving success and distinction. A Public School *education* would never give any one a position in the literary world, but a good Public School *training* might and *should* give every scholar an idea how success is to be attained, and how the battles of life are fought and its victories won. There is a cultivation of the judgment—an equipoise of character—a strengthening of purpose, which it should give, and without which all other education is comparatively valueless.

EDITORIAL NOTES.

—The recent appointments to the Ottawa Normal School have excited considerable feeling among the teachers of the country, but particularly among those in the immediate vicinity of Ottawa itself. The remon-

strance of the Ottawa Teachers' Association against the appointment is, however, in one particular unfair and unreasonable. We can heartily agree with them so long as they remonstrate because Provincial talent

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was overlooked in the selection of a Principal, but we have no sympathy with them when their complaint assumes a religious aspect. It is no fault of Mr. McCabe's that he is a Roman Catholic, neither is it any disqualification. On the other hand we would not for a moment presume to justify his appointment on religious grounds, and our system of education being presumably unsectarian, no religious preference should be recognized in connection with any of its official appointments.

We notice by a letter addressed by the venerable Chief Superintendent to the *Mail*, that it was part of the scheme for establishing additional Normal Schools that at least one Roman Catholic teacher should be appointed to the Ottawa School. Why any such arrangement should be made we fail to see. If there were any just grounds for dissatisfaction with the Toronto Normal School, because of its not maintaining a strictly non-sectarian character, or because of the impossibility of doing so, we would say at once that it was just and proper that such an evil should be guarded against in the case of the Ottawa School. We are not aware, however, that any offence was ever given on this score. We believe the Normal School education of Ontario has always been conducted on non-sectarian grounds, and why one creed should be guaranteed special privileges or receive special promises, is a mode of dealing with public matters unworthy of the advanced ideas entertained by the people of this country on educational matters.

So far as the remonstrance against Mr. McCabe, referring to his foreign origin is concerned, we believe it is entitled to some weight. Our Normal School has now been in operation nearly thirty years; some of the best men in the country have been trained within its walls; why not respect their applications and pay some deference to their claims? Is it to be supposed that a man trained under a foreign system of edu-

cation, an entire stranger to our school laws and the disposition of our people, can serve the country as well as a man who has graduated from our own schools and colleges? Is it not quite clear that Mr. McCabe, no matter how competent in other respects, and of that we have no doubt, must devote considerable time to acquire that knowledge which others educated in our own schools already possessed? We would not for a moment be understood as despising foreign schools or foreign scholars; neither would we overlook home production. If our educational system is capable of doing for us what we imagine and often say it has done, it should in a quarter of a century at least be able to furnish us with a sufficient number of men competent to fill such a position as the Principalship of a Normal School. Other things being equal, local talent should have the preference, and on these grounds we sympathise to a certain extent with the remonstrance of the Ottawa Teachers' Association.

—The suggestion made by the Chief Superintendent to submit our Text Books to a Committee of Teachers for revision is, in our opinion, a good one. There is no person so competent to decide what is adapted to the minds of children, as those who are engaged in the work of teaching. Being able to speak from experience, they speak with authority. There is certainly a great deal of unsuitable matter in the most of our Readers. In some of them there is a great deal of twaddle also, and their expurgation would be a great boon to the profession. Could teachers of long experience and good professional standing be chosen, and the present Text Books handed over to them, with instructions to eliminate such matter as was unsuitable and supply its place with something better, much additional interest would be given to the work of the teacher. No professor, no literary *savant*, can do this

as well as the practical teacher. We trust this suggestion will be acted on by the Council of Public Instruction, and such a Committee as that referred to, appointed as soon as possible.

—It would give us great pleasure to be able to discuss even at considerable length the circumstances connected with the internecine war, now raging in the Council of Public Instruction, were we able. We have before us several letters from Dr. Ryerson, who, by the way, has lost none of his old zeal for the Depository or the Educational Department generally, in which the ques-

tions in dispute are fully stated from his particular stand point. We are not able to say whether his statements should be accepted exactly as he puts them or not. In fact no verdict can be rendered in any case or an *ex-parte* statement. We do regret, however, that the meetings of the Council were not open to the press as they should be, so that the public might know the facts of the case for themselves, without having to take the word of any member of the Council. Doubtless the whole subject will be fully investigated before a Committee of the Local Legislature at its next session, and the truth fully elicited.

A TEACHER'S THOUGHTS.

BY TENA.

It is four o'clock. The bell has just rung and the children are running out of school, with bright happy faces. Their joyous glee strikes pleasantly on the ear, as they wend their way homeward. The old school house is deserted, except by the teacher, who sits alone by her desk. At first it seems as if she too is glad to be alone, and free from the toils of the day. But the look of relief is quickly followed by one of anxious, troubled thought. She rests her head on her hands and begins to think on her day's work. Is it satisfactory? Ah, no; far from it.

As she thinks on the various scenes, she thinks on the various failures she has made.

There is that one who was harshly reprov- ed. Another who exhausted her patience, and to whom aid was given, but not in the kindly manner it might have been given. Yet another and another whom she now sees were reprov- ed or punished, either hastily or harshly. There was one poor little fellow, who was puzzling himself over

what to him was a hard sum, but she re- fused to help him without seeing whether he understood it or not. She now thinks it all over and sees how, by means of a little more patience and forbearance on her part, these things might have been avoided. How she might have given a little more as- sistance, or how she might have refused, where refusal was necessary with some kindness; and thus the little ones would have been happier, and the work of the school would have been more pleasant to all.

There are even more discouraging thoughts than these. She thinks of the two years she has toiled amongst them, and when she looks for the fruit of her labor, it seems scant. At one moment she thinks she must have mistaken her vocation, since all her efforts are crowned with so little success.

There is one boy whose love she has tried in vain to win. At times he rebels and almost defies her. There are others

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who attend but about one day in seven, yet she is expected to make scholars of them. It seems as if she has all the discouragements, and but few of the encouragements of a Teacher's life.

What is that brings the bright side of the picture to view? Simply the fragrance of a bunch of flowers on her desk, and which the wind has stirred. What a new train of thought is started. She thinks of the giver, and of the improvement she has made; another who is more attentive; and thus on the picture has a light if not bright coloring. She thinks of the gifts they have given her of flowers, fruit and other things, which prove to her that she has their love. Perhaps these gifts are small, and of themselves almost worthless, but to her they are priceless as they speak of an affection that cannot be bought, and by her they are regarded as unfading flowers, because they are the offerings of love. She saves all those tiny treasures, and keeps them sacred from the eyes of curious individuals, and they are looked upon as emblems of a love that was not selfish or mercenary, and which will ever live in her heart.

From thinking of their love to her she turns to think on her love to Christ, and if to-day she has done anything to forward His cause with those dear little ones. Her own

failings are thought of and prayed over, and assistance in her labors is asked for from a source where it is never denied.

But in thinking of this the anxious, troubled look again comes over her face. Why is this? It is a pleasant subject to think of, still to her it seems painful.

Ah, dear friends, it is not the subject itself that causes those painful thoughts and troubled looks. They come when she thinks of the dear little ones, who have just left, when she thinks of the homes to which some of them return. She knows that a few of them will have the good lessons deepened, and the good impressions imprinted firmer. But there are others for whom she fears. Is it not enough to sadden her, to think of those she has been striving to lead onward and upward, returning to homes where God's name is taken oft in vain, and where they are taught deceit and a great many other vices, if not by words, by the actions of those they ought to love and respect.

This is no fancy sketch, and now do you wonder that at times we are grave and silent; if we feel in how great a manner we are responsible for those little ones, as we have undertaken a solemn work and in God's sight are responsible for it.

PRINCIPIIS OBSTA.

BY G. B. ELLIOTT.

In seeking the welfare of our schools, it does not become us to rest satisfied merely by comparing ourselves with ourselves, or with others. We have no right to content ourselves with anything short of the highest degree of excellence attainable. To determine accurately the position we occupy on the scale of excellence as educators, it is

necessary first to estimate the result of an education which is perfect, complete in all its parts, and secondly, how nearly we arrive at such results. In reference to the first it is enough to say that the Scriptural view of the subject is without exception, that youth trained in wisdom's ways will not depart from it. From this and from all

experience we learn that as with the youth so with the man. All experience also has shown that the school may have a most unlimited control of education. Now if we understand the character of our people, we may judge very nearly the worth of their schooling and of our schools. Although the school has to some extent an immediate effect upon society, yet the good and evil of the present is the result of teaching long passed; the trees of to-day were planted long ago. It is evident that since those were educated who are now upon the stage, there has been in some respects great advancement. Schools are more common and are becoming free to all. Science finds a wider and deeper channel; both justice and injustice are stronger; honesty has more power, treachery is more treacherous; skill is more skilful and craft is more cunning. But this does not necessarily argue improvement. On the contrary, it remains a question whether such advancement will not prove our destruction. Wealth is power, knowledge is power, and power properly employed is a positive good, but ill-employed is a positive evil. Knowledge is a two edged sword, and is as sharp in the hand of falsehood as of truth, and hence arises the danger as well as the necessity of schools. Doubtless at such a thought railroad, telegraph and intellect worshipers will exclaim "gew gaw!" If such can but ride swiftly, it matters not in what direction. Upon the subject of human progression they will accept sand for gold, or a scorpion for energy. The burden of their blind zeal is education, intellect, science, philosophy, perpetual motion. Give every youth a high forehead, a silver tongue, a brazen arm and a golden cutlass, no matter how they are to be used, no danger, and no consequence, whether youth has a heart of clay, stone, steel or diamond, or whether the man is to be evil, just, mad or insane. But what is the truth? The lightning tongue of the telegraph, the press with its thou-

sand voices, and every open eye bears record that the cultivation of language without principle has rendered the tongue exceedingly skilful in slander, in peddling bribes, in propagating falsehoods, in saying eat, drink, "Thou shalt not surely die," and in spreading all manner of error; that the study of mathematics and philosophy has enabled man to bridle and saddle the four winds of heaven, upon which are riding, for swift gratification, every evil passion; that the cultivation of fine arts, without common sense, has made its thousands of silly women with little feet, and tiny fingers, who faint at the approach of a spider, and would starve if they were obliged to feed themselves, has sent health and beauty into the shade, and made the goddess fashion most popular of all the host of heaven. So we abound with rule of three tricksters, geometric swindlers, philosophical gamblers, patent lever speculators, and musical fools. Scientific skill has invented the telegraph, and it hurries a lie as much as a truth; a railroad, and it carries the villain as fast as the sheriff; a patent safe and a key to unlock it. A public treasury filled with gold, and a powder plot to blow off the lid, while scientific plunderers stand ready to scramble for the spoils and swallow them with happy greediness.

It is true that almost every government on earth is threatened by the skilful plotting of evil-minded school taught men. We have nothing to fear from the ignorant, except as they are made the tools of the learned.

One lion can put to flight a thousand goats, so one highly educated man can have more influence for good or for evil, than a thousand illiterate. It is a disgrace to good sense to introduce as an argument in favor of our system of education, the fact that our prisons are filled with the unlettered, for it is a fact that in one year in the United States, the upper-ten swindlers have squandered more property and received

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more ill-gotten gain than all the ignorant night thieves and highway robbers, since the discovery of America. But the former go forth at noon-day and plunder according to Euclid and according to law, while the latter pilfer by night, are overtaken and thrown into chains. Finally, science has entrenched, and warred with truth, and error has changed the contest from fist and brickbat to revolver and bowie knife—from ambush with bow and arrow to the open field with brass cannon.

It seems to me consistent that we enquire, whence arise these evils, and whether by any system of education we may to an important degree avoid them. It matters but little whether we believe the soul ushered into the world a blank sheet of white paper, or black paper, one thing is certain, it is very susceptible of evil impressions, and like a garden, will most surely bring forth evil fruit, if good is not studiously cultivated. Here and there we find a good and truthful gardener in a parent and in a teacher. But let us leave all else and go to the school-room. Here sits a little boy of five years. He has for many months taken his two thousand steps a day, and prattled from morn till night and with his kit of tools and numerous machines has pursued his childish plays as free as a bird. But now here he is chained, his territory a square foot, his freedom pinched down to the narrow limits required by the school room decalogue—his position is unnatural and uncomfortable to him as the wooden shoe to the China woman's foot. As but little of his time is occupied by the teacher, he soon learns that he can get some relief by overreaching the statute if he can avoid the rod, and thus by the time he has the A. B. C. of reading, he is through the abs of deception. He makes the greatest advancement on that which occupies the most of his time. Every rule of the decalogue is again and again broken, while the appearance of the sapling in the hands of the sapling, only

makes him the more cautious of his tricks. A few years seem to render him skilful, he can place his eyes upon his book, move his lips, as if studying, and at the same time make and throw paper balls, construct pin darts, birds, beasts, and fishes, or even play pin with one neighbor and pinch another, until he is angry and strikes.

The latter is punished, the former screens himself with a lie. Depend upon it these are the mustard seeds that grow up and become trees, so that the birds may lodge in the branches, the acorns that become great oaks. This youth at length, as do multitudes, graduates from the common school without having spent one single day in earnest application for knowledge. At home he is indolent, disobedient and disagreeable. His parents are troubled think he will never work, that he must be educated or he will be ruined. Don't know what is the matter; think sometimes he is sick. We next find our hopeful at college, in league with all the dark lantern societies, in good and regular standing. He is completely successful, always outwits the college police. Tutors and professors receive the unwelcome part of many a sly game, and his fellow-students do not escape. For example, after he with his comrades has played at cards during morning prayers until he wearies of it, he drops a paper containing the following lines:

“While the old Pæx stands up
And says his morning prayers,
We boys kneel down,
And whist beneath the chairs.”

By this time some of his co-partners are detected and expelled, but our hero goes through and graduates with distinction. At the end of ten years he fails in business, with liabilities to the amount of some fifty or sixty thousand, his property falls through—merely into his own dark lantern. Of his comrades, two become wide-mouthed politicians, one a wholesale liquor dealer, one a drunkard, and one a corner lot specu-

lator. Not one ever earned his bread, but all but one became rich, and none ever went to prison. Yes! we must educate—our children must be educated or they will be ruined.

These are the results of a sad beginning. Our world is filled with dishonesty and all manner of corruption which principally arises from evil seed sown in childhood.

We need in our school proper religious instruction, obedience to God. But this is not what we are driving at. We need there wisdom to check the growth of weeds, thorns, and briars and to cultivate the principles of honesty and industry. We want prudence to secure willing obedience to just rules and a love of study.

SOLUTIONS TO QUESTIONS,

AT THE RECENT TEACHERS' EXAMINATION.

BY J. C. GLASHAN, ESQ.

ALGEBRA—SECOND CLASS.

$$(5) \quad d\left(\frac{a}{x} + \frac{b}{y}\right) - b\left(\frac{c}{x} + \frac{d}{y}\right) = dm - bn$$

$$\therefore \frac{ad - bc}{x} = dm - bn$$

$$\therefore x = \frac{ad - bc}{dm - bn}$$

$$c\left(\frac{a}{x} + \frac{b}{y}\right) - a\left(\frac{c}{x} + \frac{d}{y}\right) = cm - an$$

$$\therefore \frac{bc - ad}{y} = cm - an$$

$$\therefore y = \frac{bc - ad}{cm - an}$$

(6.) Multiplying the first equation by $\frac{d}{b}$ it becomes

$$\frac{ad}{bx} + \frac{d}{y} = \frac{md}{b}$$

but $\frac{ad}{b} = c$ and $\frac{md}{b} = n$

hence it becomes $\frac{c}{x} + \frac{d}{y} = n$

or the first equation is the same as the second, being derived from it by multiplication by $\frac{d}{b}$.

Thus any attempt to eliminate y also eliminates x , or gives

$$\frac{0}{x} + \frac{0}{y} = 0.$$

An example of these conditions is

$$\frac{7}{x} + \frac{6}{y} = 35,$$

$$\frac{2}{x} + \frac{18}{y} = 10.$$

(7.) $100 - 2x = 3(48 - x)$

$\therefore x = 44.$

(8.) $\frac{2}{x} + \frac{2}{y} + \frac{8}{y} = 1$

$$\frac{3}{y} = \frac{6}{x} + \frac{1}{2} \text{ of } \frac{6}{y}$$

$\therefore x = 14 \quad y = 11\frac{2}{3}.$

(9.) P's rate relative to B's is $m - n$

If $m \nmid n$, P will gain on B two miles in $\frac{2}{m - n}$ hours.

If m / n , P has lost on B two miles in

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$\frac{2}{m-n}$ hours.

If $m=n$, P neither gains or loses.

∴ if $m-n$ be positive they will be together $\frac{2}{m-n}$ hours after noon ;

if $m-n$ be negative they were together $\frac{2}{m-n}$ hours before noon ;

if $m=n$ they neither were nor will be together.

(10.) $P = 10x + y$ $Q = 10y + x$

∴ $P + Q = 11(x + y)$

and $P - Q = 9(x - y)$

∴ $11(x + y) (P - Q) = 9(x - y) (P + Q)$

ALGEBRA—FIRST CLASS.

(1.) $m^2 - 4a^2 = 0$

$m^2 - 4b^2 > 0$

$m^2 - 4c^2 < 0$

∴ $m^2 - 4b^2 > m^2 - 4a^2 > m^2 - 4c^2$

∴ $b^2 < a^2 < c^2$.

(2.) $\sqrt{\frac{2a + 2\sqrt{a^2 - (b-c)^2}}{2}} =$

$\sqrt{\frac{a + (b-c) + \sqrt{(a+b-c)(a-b+c)}}{2}} + a + (b-c)$

$= \frac{\sqrt{(a+b-c)} + \sqrt{(a-b+c)}}{\sqrt{2}}$

(3.) $x^2 y^2 + \frac{36}{7} xy - \frac{36}{7} = 0$

∴ $xy = -6$ or $\frac{6}{7}$

$(x-y)^2 + 4xy = 25 - 24 = 1$

∴ $x + y = \pm 1$

$x - y = 5$

∴ $x = 3$ or 2

$y = -2$ or -3

Other values for $xy = \frac{6}{7}$.

4.) $(x+y)^2 + (x+y) = 42 + 30 = 72$

$x + y = 8$, or -9

$(x+y)^2 - 4xy = 64 - 60 = 4$

∴ $x - y = \pm 2$

$x = 5$ or 3 ,

$y = 3$ or 5 .

Other values for $x + y = -9$.

(5.) $x^4 + 1 = \{ (x^2 + 1) + x\sqrt{2} \} \{ (x^2 + 1) - x\sqrt{2} \} = 0$

Equating each factor in succession to zero, and solving the quadratics thus obtained gives

$x = \frac{\pm 1 \pm j}{\sqrt{2}}$

(6.) Let d equal the intervals between the startings and t equal the time from C's starting until the second observation.

Distance from starting point at first observation,

A, - - - - md ,

B, - - - - nd ,

C, - - - - o .

Distance from starting point at second observation,

A - - - - $m(t + 2d)$

B - - - - $n(t + d)$

C - - - - pt .

Now $pt - n(t + d) = nd$ or $(p - n)t = 2nd$

and $pt - m(t + 2d) = 2md$ or $(p - m)t = 4md$

∴ $\frac{p - m}{p - n} = \frac{2m}{n}$

∴ $\frac{p + m}{p} = \frac{2m}{n}$

∴ $\frac{1}{m} + \frac{1}{p} = \frac{2}{n}$

(7.) Bookwork.

$14x + 1 = 5y + 3$

$x = 5(3x - y) - 2$

$x = 5t - 2$

$y = 14t - 6$

$14x + 1 = 43$.

(8.) Bookwork.

$a = b - nd$

$c = b + nd$

$a + c = 2b$

$a - c = -2nd$

$ac = b^2 - n^2 d^2$

$$\frac{b^2}{b^2 - ac} = \frac{4b^2}{4n^2 d^2} = \left(\frac{a+c}{a-c}\right)^2$$

$$(9.) P's \text{ rate} = \frac{AD}{AB} = \frac{a+c}{a-c}$$

$$\therefore = \frac{AB+AD}{t - 1\frac{1}{2}} = \frac{AB+AD}{1\frac{1}{2}}$$

$$\therefore = \frac{t}{t} \frac{CE}{BC}$$

$$Q's \text{ rate} = \frac{BC}{3} = \frac{BC}{3}$$

$$\therefore 2AB.CE = BC(AB+AD)$$

But since CE : EB :: BD : AD

$$\therefore CE : CB :: BD : AB$$

or AB.CE = BC.BD

$$\therefore 2BC.BD = BC(AB + AD)$$

$$\therefore 2BD = AB + AD = BD + 2AD$$

$$\therefore BD = 2AD$$

$$\therefore CE = 2EB$$

But

$$\frac{1}{BD} = \frac{2}{EB} = \frac{1}{CE} = \frac{3}{2EB}$$

$$\therefore 2EB = 3BD.$$

REMARKS ON CERTIFICATES.

BY AN OCCASIONAL CONTRIBUTOR.

The recent outbreak between the Chief Superintendent of Education and some of the members of the Council of Public Instruction, together with specific statements made by the *Globe*, must have convinced the careful reader that some changes ought to be made in the Depository, and the granting of teachers' certificates.

It is very well for Dr. Ryerson to write columns of defence: but most people will be very slow to believe there is nothing wrong where such a course is necessary, especially when they are penned to defend himself against the assertions of Professors Wilson and Smith. The Chief, on former occasions, has proven his skill in disputation; however, there is ground for believing his declining years are marked by tactics reflecting little credit on himself or the interests he is in a position to promote. No person can successfully question the utility of his labor to perfect a system of popular education having no superior on the continent, and without attempting to diminish his success, it must be admitted there are defects requiring critical investigation to bring to the surface.

Passing over the Depository dispute as being only of minor consideration, let us look at the certificate question. The *Globe* asserts the examination questions were handed to candidates the day preceding writing on them. Now, this may have occurred only once, but it is sufficient to show the unparalleled laxity of some Inspectors, for they, not assistant examiners, must answer the charge.

The public would gladly have thought the *Globe's* statement unfounded, but, it reiterated it, and must have been well assured such did actually occur, or it would not dare to repeat the assertion. Will the time never come when teachers can feel their certificates are true exponents of the ordeal through which they pass to obtain them?

But supposing, what is possible only in supposition, that Inspectors and examiners did their duty faithfully, yet, the candidate may pass, obtaining the highest grade of a second-class certificate, without the slightest knowledge of some of the subjects he is required to teach. The remark was once made by a gentleman holding a high educational position in this Province, that a cer-

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tain candidate got a first A, his knowledge of chemistry being confined to what he learned from Dr. Ryerson's book on this subject, the night preceding the examination. If this is the case, and it is, the evil was and is general, though it might be added a thorough knowledge of the work named would not be sufficient to answer ten per cent. on first class chemistry papers, as now prepared by the Central Committee.

Of course, it may be possible there was a time when even the highest grade of certificate was not difficult to obtain, and from remarks made recently in the *Globe* by a gentleman from Ottawa, and by another a few months ago in the *TEACHER*, it is evident the time has arrived when it is the duty of some one to explain.

It will therefore be easily seen how vast is the difference in the attainments of those holding exactly the same certificate; this might be so even if all wrote under the same circumstances; but, if all did so, it would be an assurance they were as good as their certificates represented. Teachers generally are not better than their certificate, but, in many cases infinitely worse. With such examinations, no wonder the profession is crowded with those who never can be any real benefit to pupils attending our schools. We may console ourselves by saying it is an improvement; no doubt it is, yet much remains to be done to have anything like an approximation to perfection. The question, during the last few weeks, has been fully discussed; it cannot be more closely examined without giving names and places,—which would scarcely be advisable.

To point out defects in a bad system, or, in the administration of a good one, is easy; to suggest a remedy at once applicable and effective, is difficult. Those who have certificates and did not merit them, are at large. How are they to be reached? Many solutions might be given leading directly to the same result. The following is one that would, with slight

modification, meet the requirements of the difficulty.

Let all holding Provincial certificates go to some central place and write again, under the supervision of those who will see that every candidate minds his own business. The experiment will not cost much; besides it will remove the stain from every parchment in the Province. Likewise, let all future examinations take place in Toronto, under the most rigid watchfulness; nothing else will do; and, till this or some equally stringent method is adopted, we will be troubled with endless complaints arising from this source. Some may argue no necessity for all writing. There is not, if the guilty ones would come forward; but, it is much better to put the innocent to a slight inconvenience than have so many reaping such high rewards for practices so humiliating to every teacher valuing the honor of his calling. This is one method by which we can come out of this degrading position with clean hands. A year's review will brighten us up, and those not choosing to stand the test must have it tacitly understood, they shrink from the trial, or don't think it worth the trouble to remove the greatest possible stain from our standing as teachers.

With examinations going on simultaneously in fifty or sixty different places, under as many or more different men, there cannot, by the utmost stretch of charity, be anything better expected than occasional exhibitions of unsurpassed devices in cheating. Some of the means employed are exceedingly ingenious, showing rare skill, which, if exerted in a proper direction, would ensure special commendation. Candidates soon find out the best place to write, and, if they are not up to the mark, make such arrangements for assistance as will ensure success. It simplifies the examination very much to have the papers the day previous, or the liberty of correcting them when all is over.

Before closing, it would be neglect not to say a few words respecting third class certificates. Generally speaking, the best method of treatment is to cut them off altogether. For poor districts, a low grade of medical men is not licensed to aggravate diseases of the body; no valid reason can be assigned for granting permission to giddy boys and girls, to squander the time and starve the intellects of those whom the province has a right to supply with the best available instruction. A candidate at the recent examination is reported as having obtained seven marks in arithmetic, yet a certificate was issued, for the simple reason that there was no legal way of preventing it. There is surely room for improvement when such is legally possible. Let the venerable Chief rally again, and before he ceases having the School Law improved, let it be

such that we can feel proud in calling him the principal builder of an educational system having no rival in modern times.

It can scarcely be doubted the Legislature will give him, on proper representation, the requisite legal enactments. There are able and willing men anxious to co-operate with him, and it is an irrefutable fact, that some of the brightest and best of those are members of the Council of Public Instruction. We wish their energy spent in what will do the country good, at the same time, we can scarcely deplore the events that gave rise to the late discussion. A storm clears the atmosphere. We will watch future proceedings with interest, expecting an attitude will be found sufficiently powerful to effectually stop the mischievous practices indicated.

OUR PUBLIC SCHOOL TEACHERS.

ADDRESS READ BEFORE THE EXETER DISTRICT TEACHERS' INSTITUTE, ON SATURDAY SEPT. 11TH, 1875—BY REV. H. GRACEY, AND PUBLISHED BY REQUEST.

This is the first time I have had an opportunity of addressing an assemblage of teachers; and I trust I am not insensible to the importance of the occasion and the intelligence of my audience. I feel that the occasion calls for something bearing upon the work in which you are all so deeply interested; and yet one who has been so long out of the practical duties of the profession as I have been, may well feel hesitancy in attempting to address a body of teachers regarding their work. And especially is this the case when such a change has come over the whole character and surroundings of the profession since I left it. I need not tell you of the changes that have taken place during the last decade. New text books have been intro-

duced, and new subjects of study; new methods of teaching have been recommended and already adopted; and conspicuously a higher standard of proficiency is now required than was required ten or fifteen years ago. There were teachers then, many teachers then, we need not doubt, who by their ability and scholarship would take high rank in the profession now. Yet it must be acknowledged that a higher standard is attained by the average teacher today than by the average teacher of ten years ago. This is a matter for general congratulation. It shows that public opinion is in favor of an advanced form of national education; and that it is in favor of making strenuous efforts and real sacrifices to secure this.

There are few features of modern civilization more hopeful than this. We do not believe that good citizens, in the best sense of the term, can be made by intellectual culture alone. And as little do we believe that good citizens can be made without intellectual culture. We must have education, if we are, in our national capacity, to rise and work with the foremost peoples of this age. We need it, not as of itself sufficient, though a most excellent thing, but as the basis on which can be built the still higher qualifications for good citizenship, patriotism, morality and religion. Without these our most intellectual civilization would be little above barbarism. But the patriotism and morality that have not a foundation of intelligence to rest upon, are apt to prove shallow and unreliable; and the religion that has not such a basis, tends towards superstition and then fanaticism. It seems to me therefore, that we have, in this Province at any rate, made a very fair and hopeful beginning in the national career, which we all trust stretches far before us into the dim vista of years and centuries. And I think when the history of this part of the Dominion comes to be written by some future Canadian Macaulay or Froude, and the causes are traced which have led to the social and domestic comfort, the commercial activity and the wealth, the civil and religious liberty, which we may well anticipate our descendants shall then, under the blessing of God, enjoy,—when I say, the causes of these are traced in the early annals of our Province, I have no doubt a prominent place will be given to the efforts of the people to give their children a sound education. It cannot but prove creditable to our age, that amid all the engrossing cares and labors of a new country just organizing, so to speak, a national life, so much attention is given to an educational system, and that such a numerous body of highly educated men and women are sustained for the special work of giving all in our

land, rich and poor, a liberal education.

But I do not purpose to dwell, at this time, upon the results and benefits, present or prospective, of our educational system; though this, if properly treated, could not but prove an interesting theme. I have thought half an hour might be profitably spent at this meeting, considering the following subject:—*The labors, privileges and responsibilities of our Public School Teachers.*

I. THE LABORS OF THE PROFESSION.—It is difficult for persons engaged in one department of labor to understand so fully another department, as to appreciate readily the hardships and toil connected with it. The man engaged in heavy drudgery, may envy the skilled artisan at his comparatively light and clean labor; and he cannot see how the artisan becomes wearied. The farmer, again, who has to toil “from early morn till dewy eve,” may wish he had the lot of the laborer, whose toils and cares begin at a certain hour in the morning and are completely ended at a certain hour in the evening. While on the other hand the clerk with his long hours of confinement, or the tradesman in his dusty and dingy shop, may envy the lot of the husbandman, who is his own master, and has always plenty of pure air and healthful exercise. Each feels *the burdens* in his own sphere, and sees *the advantages* in his neighbors. And thus we are apt to sympathise but very imperfectly with each other's difficulties. But if this be the case between different classes engaged in the different departments of physical toil, much more is it the case between those engaged in physical toil on the one hand, and those whose labors are rather of an intellectual kind on the other. How seldom do you find a farmer or blacksmith, a mason or hod-carrier, a man of the axe or the spade, who will frankly acknowledge that a school teacher is a worker. They laugh at the very suggestion. To men who are engaged in such active occupations, the duties

of the teacher, the office clerk, the lawyer, the minister, seem like rest and play. And so far as muscular exhaustion is concerned, there is very little of it in their case. But man has other faculties to exercise besides his muscles. No man who has ever exercised his mind, can fail to know that there is the possibility of excessive toil, while the body is at perfect rest; and the rest of the body itself, becomes a burden heavier than an ordinary physical exercise. A man once spoke to a minister about the easy times he had; "nothing to do," as he expressed it, "but sit in the house or drive round in a comfortable conveyance." The minister maintained however, that he had work to do, and work that was really exhausting.

"Why what do you do?" cried the laborer.

Said the minister, "I prepare two or three sermons or addresses every week. I appear, on an average four times a week before a public audience, to instruct them, and that virtually the same audience year in and year out, so that I must bring forward new matter, or old subjects in a new dress, every time I address my people. In addition to this I do a considerable amount of pastoral visitation. Then among hands I have private business and family concerns to attend to; while over and above all, I have a good deal of anxiety about public affairs, in the prosperity of which I am deeply interested: 'These things,' said he, 'involve a great deal of labor.'"

"Nonsense," cried the other. "There is no real work in all you have mentioned. I tell you what; if you would go out with me to the bush, and chop your two cords of wood in the day, you would know what work is."

"Well," replied the minister, "I dare say that would, at the outset, fatigue me very much, because I am not accustomed to that kind of labor. But I am willing to do this with you, if you are convinced my labor is so light. I shall take your axe, go

to the bush, and chop, split and pile two cords of wood, if you will go to my study, take my pen and books, and compose, not a very learned or eloquent, but just a fair average sermon. And I think I shall complete my task as soon as you, and not lose more sweat over it either."

The man of the axe decided not to try the contest.

It is a fact, labor of this kind is not understood by those who engage in occupations that demand chiefly muscular exertion; and yet it is real labor, as truly exhausting, as really demanding remuneration, as the most physical pursuits. It has been well remarked, the labor of the author who produces a learned and valuable book, is more important and valuable, than the labor of the amanuensis who committed the thoughts to paper, or than that of the printer who printed the book, or that of the book binder who prepared it for the shelf, or that of the clerk who sold it. Yet he of all these is the only one who has had no physical labor in connection with it.

The teacher is one whose work don't show as work. Yet it is very real and serious toil. I know it is possible to teach in such a way as to do very little work. But no live teacher can adopt that plan. No good teacher leads an idle life or an easy one. In proof of this I need only refer to the manifest effects produced too frequently upon the physical constitution by teaching. How many of our teachers soon lose, in the school-room, that robust health they enjoyed in the more active duties of the farm or the work shop!

A teacher's labors are twofold. (1st,) his studies to fit himself for the profession; and (2nd,) his labors in teaching his pupils. No man or woman can now get into the profession in Ontario, without serious and long protracted study. The examinations are so searching, and the benefits of favoritism are so impossible, that there is only one way by which a person can hope to reach a

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position in the profession, and that is by dint of hard study. As "there is no royal road to learning," so there is no royal road to the teacher's desk. Let anyone look over the list of subjects upon which a candidate must be examined; let one consider the multitude of questions that are given; and the testing character of these questions; and if he don't believe that the answering of them indicates labor, let him sit down and try to answer them himself. I am persuaded this last process will convince the most doubtful. The mere fact that one has qualified for the position is proof positive of labor; there is no other way by which he could have reached it. I once heard of a young man who appeared before a Presbytery to be examined with a view to his being recommended as a student in Divinity. His appearance before the Presbytery was far from creditable. He proved utterly deficient in almost every branch upon which he was examined. At length his own minister, naturally inclined to strain a point in his favor, lost all patience, and rising addressed the would-be student as follows:—"Jannie, if you are willing to do better, but can't, my opinion is you are not fit for the ministry. And if you are able to do better, but won't, my opinion is the same, you are not fit for the ministry." The present mode of testing the scholarship of candidates for the profession of teaching is equally hard on those who *can't* and those who *won't*.

We see therefore that labor is necessary to get a footing at all in the profession. And more, it is needed to retain that position. I am inclined to approve of that regulation that refuses to renew third class certificates, after the time for which they are given has expired. There may result from this individual cases of hardship. But there is scarcely a general rule against which some such cases cannot be quoted. It may occasionally drive out of the profession a person who has talents for teaching,

and who has acquired experience, a most important qualification, but who has failed, after conscientious effort, to reach the minimum of marks in some one branch. Yet after making all due deductions for such cases, I think the regulation is a good one. For every good teacher it casts out, it casts out a dozen drones. It stimulates teachers to keep up their studies, and push forward to a higher position. If a young man or woman is unable, three years after a third class certificate has been obtained, to take a second, the probabilities are, something is wrong. There has been lack of diligence, or there has been culpable procrastination, or undue confidence in shallow study. Such delinquencies do not the less deserve rebuke because they are so common. No person then can hold permanently the position of teacher in our Province, unless he has reached a high standard of qualification. This is enough to prove that the profession is no place of refuge for the incapable and the lazy.

Having said so much upon the labors for qualification, we now proceed in the next place to speak of the labor involved in the actual duties of teaching.

No good teacher can be idle during school hours. That is self-evident. But may not a teacher bid farewell to work when he turns the key in the school-house door at 4 p.m., and enjoy himself as he pleases till 9 o'clock next morning? I think not. And I believe the experience of the best teachers will bear me out in this opinion. It is the teacher who prepares for his class-work of the day following that succeeds. There are very few who are able to instruct an advanced class in one of our Public Schools without a special preparation of the lesson. It is true any teacher who has gone over the ground before may drill the pupils in a certain slipshod fashion upon it. But if a teacher wishes to appear fresh, and feel so, before his class; if he wishes to give edge and in-

terest to his instruction, keep clear of old ruts; and make the work as thorough as it should be, he must prepare himself. Dr. Arnold of Rugby, was once asked why he gave so much time to the study of familiar subjects. He replied, "I wish my pupils to drink from a running brook rather than from a stagnant pool." The evils which result from exclusive dependence upon the labors of a past period, have appeared in other places besides the school-room. Some professors have a series of lectures which they continue to read to their students five, ten, or twenty years, without making any alteration. These lectures go over a certain field. Modern research may have considerably altered the aspects of that field, but the foggy professor seems all oblivious of the change. His lectures are stereotyped. They are like the laws of the Medes and Persians that cannot be altered. And so one generation of students after another hears the same old story, till it is threadbare and worthless. I heard of a Professor in Church History who had a series of lectures that he delivered to his students. They were excellent so far as they went. But they descended no farther than the reign of Constantine the Great. Whether the church had any history after that period, that was worth knowing, or whether there was any church at all after that period, were matters wholly unknown to the students, so far as this worthy Professor's lectures were concerned. I have heard of another professor, whose subject was Systematic Theology. He had an excellent series of lectures extending over a two years' course. But they touched upon no phases of his great theme later than the 17th century. With modern aspects of theology the students became acquainted

from other sources than the prelections of this professor; they had all been prepared twenty years before, and the labor of recasting them, or preparing new lectures, was too great. So the old story was told over and over again, in precisely the same order, and illustrated by precisely the same anecdotes. Such a method of procedure is bad, both for teacher and taught. It establishes a sort of dry-rot in the whole class, that is very difficult to get rid of.

The teacher in any position must work himself, or his pupils will not make progress; and his working habit must show itself in his school among his pupils. Go into some schools and all is quiet and orderly. On every side there are evidences of work. The pupils are all busy with something. Notice the children when they come up to a class; their every look and action indicates that they are going to do something, and are glad to have the opportunity. Look at these children as they leave the school in the evening; everyone is carrying off a book or slate, or something that will aid him in preparing his lesson for the next day. Follow them to their homes. They talk about their studies as well as their play. They perplex their parents with questions. They are eager for an opportunity of reciting some of their lessons, that the parents may know how they are getting on, and that they may assure themselves that they are preparing thoroughly. These, and such as these, are I think generally regarded as healthful symptoms in a school. But I think I may safely affirm, such symptoms as these are never found in a school whose teacher is a lazy, listless drone. No idle teacher ever inspired his pupils with enthusiasm.

(To be continued.)

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SELECTIONS.

APHORISMS OF PESTALOZZI.

The mode of familiarizing a child with the habit of thinking on what he sees, and speaking after he has thought, is not to talk much to, but to enter the conversation with him.

Not to address to him many words, but to bring him to express himself on the subject.

Not to exhaust the subject, but to question the child about it, and let him find out and correct the answers.

The attention of a child is deadened by long expositions, but roused by animated questions.

Let the questions be short, clear, and intelligible.

Let them excite the child to observe what is before him ; to recollect what he has learned ; to muster his little stock of knowledge for materials for an answer.

Show him a certain quality in one thing, and let him find out the same in others.

Tell him that the shape of a ball is called round.

If you bring him to point out other objects to which the same predicament belongs you have employed him more usefully than by the most perfect discourse on rotundity.

In the one instance he would have had to listen and to recollect ; in the other, he has to observe and to think.

When I recommend to a mother to avoid wearying a child by her instructions, I do not wish to encourage the notion that instruction should always take the character of amusement, or even of a play.

A child must, very early in life, be taught that exertion is indispensable for the attainment of knowledge.

But a child should not be taught to look upon exertion as an evil.

The motive of fear should not be made a stimulus ; it will destroy interest, and speedily create disgust.

Interest in study is the first thing which a teacher, a mother, should endeavor to excite and keep alive.

There are scarcely any circumstances in which a want of application in children does not proceed from a want of interest.

There are, perhaps, none in which a want of interest does not originate in the mode of teaching adopted by the teacher.

In saying this, I do not mean to make myself the advocate of idleness or irregularities.

Put, I would suggest that the best means to prevent them, is to adopt a mode of instruction by which the children are less left to themselves—less thrown upon the unwelcome employment of passive listening—less harshly treated for little and excusable failings, but more roused by questions, animated by illustrations, interested and won by kindness.

There is a reciprocal action between the interest which the teacher takes and that which he communicates.

If he is not, with his whole mind, present at the subject—if he does not care whether it is understood or not, whether his manner is liked or not—he will never fail of alienating the affections of his pupils, and rendering them indifferent to what he says.

But real interest taken in the task of instruction—kind words, and kinder feelings, the expression of the features, and the glance of the eye—are never lost upon children.—*Brooklyn Journal of Education.*

AN OPEN LETTER,
TO OUR CORRESPONDENTS.

(From the "Teacher" published by Eldridge & Bro., Philadelphia, we take the following letter. It is so very appropriate, that we copy it entire, with only a few changes to suit our own Province, and we trust it will receive careful attention.)

DEAR FRIENDS:—This letter is written for the purpose of inviting your attention to a few suggestions, the proper observance of which will do much to facilitate prompt and satisfactory attention to your correspondence with the various publishing houses with which you may have occasion to communicate.

1. *Begin your letter by giving your Post Office, and County, and let the names be plainly and legibly written.*

In very many cases, a letter will be headed thus:—Jonesboro', August 10, 1876, without naming County or Post Office. In nine cases out of ten, no information can be gleaned from the postmark on the envelope, owing to its illegibility.

2. *Be careful to sign your name to your letters.*

It is remarkable how many persons fail, at times, to sign their names to their letters. Letters having no signature must, of course, remain unanswered.

3. *Sign your name in a plain, legible manner.*

Your signature may appear plain enough to you when you have written it, but when examined by persons who are not familiar with your handwriting, it may be impossible for them to decipher it. Hence such letters must go unanswered.

4. *If you have occasion to write letters to different parties at the same writing, be sure to finish one letter, enclose it in its envelope, and direct it to the party for whom it is intended before commencing another.*

The observance of this rule will effectually prevent a letter intended for "My dear John," or "My Darling Mary," from being forwarded to a publishing house.

5. *After having written your letter, read it over carefully before enclosing it in its envelope. Particularly should this be done when you intend to enclose money in your letter.*

Not a week passes but in which we receive letters to the following effect; "Enclosed I send you," &c., but the money which the writer intended to enclose is not to be found, from the fact that he failed to enclose it, by hastily sealing the letter before reading it over.

6. *Ladies when writing to parties to whom they are not known, should prefix Miss or Mrs., as the case may be, to their signature.*

J. A. Smith may be John, Julia, Joseph, or Jane A. Smith. By prefixing Miss or Mrs., according to circumstances, Miss J. A. Smith will not receive her reply addressed to Mr. J. A. Smith, or J. A. Smith, Esq.

7. *In sending letters asking for information, always enclose a stamp for reply. Common courtesy requires this.*

8. *See that the envelope is properly directed.*

Of the three or four million letters that go to the Dead Letter Office every year, about seventy thousand are not properly directed, and about five thousand have no directions whatever.

SUCCESS IN TEACHING.

Every teacher desires success. It can be had. Will you try to deserve it? If so, decide in your own mind what success is, then how to seek it, and lastly work for it. Success is obtaining the right results. In teaching, it consists in making the pupils know—in leading them to love study, in

training them to right methods of study, in forming right habits, in cultivating their tastes and talents judiciously.

To obtain success one needs knowledge and skill. He needs to know the right methods of work, and have skill in the same.

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Avoid all common errors, make a list of such errors as you know other teachers have, make a list of your own, and avoid them all. Seek perfection. The requisites of a good school are: a good school-house, a good teacher, and good scholars.

You can keep your house neat, quiet, and well ventilated. The house has an influence on the school; keep the air pure and the rooms neat.

You can be a good teacher. Success depends not upon one great effort, but upon regular, patient, and faithful work. Keep at it—"with time and patience the mulberry leaf becomes satin."

Go to school in season. Call school at the right time. Have the pupils come in promptly and quietly. Write out your order of exercises. Arrange your programme as well as you can. Carry it out to the minute. Consider it as necessary for you to follow it as for the children to follow it. Provide enough work for every pupil. Suppress whispering. Secure the co-operation of your pupils. Lead them to see that it is for their interest to have good order and a good school. Require hard study from your pupils. Lead them to love study. Give short lessons. Assign them so plainly that none may mistake their lessons. Have the lessons well studied. Require clearness, promptness, and accuracy in recitation. A little well-known is of great value. Let not "how much, but now well," be your motto. Do not assist the pupils much at recitation. Cultivate their self-reliance. Self-help is their best help. Do not let them help each other. Excite an interest in study. Be enthusiastic thyself, and you will make your

pupils enthusiasts. Encourage those who need encouragement. Review often. Talk but little. Be quiet yourself. Speak kindly and mildly. Be firm. If you love the pupils, they will love you. Keep good order. Government is the main thing. Have order and good order, whatever you lack.

A good teacher can become better. Be not satisfied with your present skill. Seek to improve yourself as a teacher. Study hard yourself, and study daily. Try to learn more each day than you learned the day before. Have a fixed time for your own study. Use that in study. If you do not love learning, why should your pupils?

Talk with parents about their children. Many parents can give you useful hints about teaching. Urge the parents to send their children to school regularly, and to talk with them about their studies. Mark down your errors, their causes and effects—shun them in future.

Keep a list of your plans, your difficulties, and your methods of meeting them. Look at the list often, and see if you are carrying out your plans.

Read up on teaching. Read for improvement. Adopt new methods with caution. Hold fast the good, reach after the better. See if you can give a reason for your methods of teaching. Write. Make a list of the marks of a good teacher. Attempt to make these your own. Be not satisfied with doing as well as others—surpass them. Surpass yourself daily.

Study and practice these directions. Failure will be impossible. — *American Journal of Education.*

WHAT IS TEACHING?

In the first place, teaching is not simply telling. A class may be told a thing twenty times over, and yet not know it. Talking to a class is not necessarily teaching. I have known many teachers who were brimful of information, and were good talkers, and who discoursed to their classes with ready utterance a large part of the time allotted to instruction; yet an examination of their classes showed little advancement in knowledge.

There are several time-honored metaphors

on this subject, which need to be received with some grains of allowance, if we would get at an exact idea of what teaching is. Chiselling the rude marble into the finished stone; giving the impression of the seal upon the soft wax; pouring water into an empty vessel;—all these comparisons lack one essential element of likeness. The mind is, indeed, in one sense, empty, and needs to be filled. It is yielding, and needs to be impressed. It is rude, and needs polishing. But it is not, like the marble,

the wax, or the vessel, a passive recipient of external influences. It is itself a living power. It is acted upon only by stirring up its own activities. The operative upon mind, unlike the operative upon matter, must have the active, voluntary co-operation of that upon which he works. The teacher is doing his work, only so far as he gets work from the scholar. The very essence and root of the work are in the scholar, not in the teacher. No one, in fact, in an important sense, is taught at all, except so far as he is self-taught. The teacher may be useful, as auxiliary, in causing this action on the part of the scholar. But the one, indispensable, vital thing in all learning, is in the scholar himself. The old Romans, in their word education (*educere*, to draw out), seem to have come nearer to the true idea than any other people have done. The teacher is to draw out the resources of the pupil. Yet even this word comes short of the exact truth. The teacher must put in, as well as draw out. No process of mere pumping will draw out from a child's mind knowledge which is not there. All the power of the Socratic method, could it be applied by Socrates himself, would be unavailing to draw from a child's mind, by mere questioning a knowledge, for instance, of chemical affinity, of the solar system, of the temperature of the Gulf Stream, of the doctrine of the resurrection.

What, then, is teaching ?

Teaching is causing any one to know. Now no one can be made to know a thing but by the act of his own powers. His own senses, his own memory, his own powers of reason, perception, and judgment, must be exercised. The function of the teacher is to bring about this exercise of the pupil's faculties. The means to do this are infinite in variety. They should be varied according to the wants and the character of the individual to be taught. One needs to be told a thing ; he learns most readily by the ear. Another needs to use his eyes ; he must see a thing, either in the book or in nature. But neither eye nor ear, nor any other sense or faculty, will avail to the acquisition of knowledge, unless the power of attention is cultivated. Attention, then is the first act or power of the mind that must be aroused. It is the very foundation of all progress in knowledge, and the means

of awakening it constitute the first step in the educational art.

When, by any means, positive knowledge, facts, are once in possession of the mind, something must next be done to prevent their slipping away. You may tell a class the history of a certain event ; or you may give them a description of a certain place or person ; or you may let them read it ; and you may secure such a degree of attention that, at the time of the reading or the description, they shall have a fair, intelligible comprehension of what has been described or read. The facts are, for the time, actually in the possession of the mind. Now, if the mind was, according to the old notion, merely a vessel to be filled, the process would be complete. But mind is not an empty vessel. It is a living essence, with powers and processes of its own. And experience shows us, that in the case of a class of undisciplined pupils, facts, even when fairly placed in the possession of the mind, often remain there about as long as the shadow of a passing cloud remains upon the landscape, and make about as much impression.

The teacher must seek, then, not only to get knowledge into the mind, but to fix it there. In other words, the power of the memory must be strengthened. Teaching, then, most truly, and in every stage of it, is a strictly co-operative process. You cannot cause anyone to know, by merely pouring out stores of knowledge in his hearing, any more than you can make his body grow by spreading the contents of your market-basket at his feet. You must rouse his power of attention, that he may lay hold of, and receive, and make his own, the knowledge you offer him. You must awaken and strengthen the power of memory within him, that he may retain what he receives, and thus grow in knowledge, as the body by a like process grows in strength and muscle. In other words, learning, so far as the mind of the learner is concerned, is a growth ; and teaching, so far as the teacher is concerned, is doing whatever is necessary to cause that growth.

Let us proceed a step farther in this matter.

One of the ancients observed that a lamp loses none of its own light by allowing another lamp to be lit from it. He uses the illustration to enforce the duty of liberality

in imparting our knowledge to others. Knowledge, he says, unlike other treasures, is not diminished by giving.

The illustration fails to express the whole truth. The imparting of knowledge to others not only does not impoverish the donor, but it actually increases his riches. *Docendo discimus.* By teaching we learn. A man grows in knowledge by the very act of communicating it. The reason for this is obvious. In order to communicate to the mind of another a thought which is in our own mind, we must give the thought definite shape and form. We must handle it, and pack it up for safe conveyance. Thus the mere act of giving a thought expression in words, fixes it more deeply in our own minds. Not only so; we can, in fact, very rarely be said to be in full possession of a thought ourselves, until by the tongue or the pen we have communicated it to somebody else. The expression of it, in some form, seems necessary to give it, even in our own minds, a definite shape and a lasting impression.

Some teachers seem to be ambitious to do a great deal of talking. The measure of their success, in their own eyes is their ability to keep up a continued stream of talk for the greater part of the hour. This is of course better than the embarrassing silence sometimes seen, where neither teacher nor scholar has anything to say. But at the best, it is only the pouring into the exhausted receiver enacted over again. We can never be reminded too often, that there is no teaching except so far as there is active co-operation on the part of the learner. The mind receiving must reproduce and give back what it gets. This is the indispensable condition of making any knowledge really our own. The very best teaching I have ever seen, has been where the teacher said comparatively little. The tea-

cher was of course brimful of the subject. He could give the needed information at exactly the right point, and in the right quantity. But for every word given by the teacher, there were many words of answering reproduction on the part of the scholars. Youthful minds under such tutelage grow apace.

It is indeed a high and difficult achievement in the educational art, to get young persons thus to bring forth their thoughts freely for examination and correction. A pleasant countenance and a gentle manner, inviting and inspiring confidence, have something to do with the matter. But, whatever the means for accomplishing this end, the end itself is indispensable. The scholar's tongue must be unloosened as well as the teacher's. The scholar's thoughts must be broached as well as the teacher's. Indeed, the statement needs very little qualification or abatement, that a scholar has learned nothing from us except what he has expressed to us again in words. The teacher who is accustomed to harangue his scholars with a continuous stream of words, no matter how full of weighty meaning his words may be, is yet deceiving himself, if he thinks that his scholars are materially benefited by his intellectual activity, unless it is so guided as to awaken and exercise theirs. If, after a suitable period, he will honestly examine his scholars on the subject on which he has himself been so productive, he will find that he has been only pouring water into a sieve. Teaching can never be this one-sided process. Of all the things we attempt, it is the one most essentially and necessarily a co-operative process. There must be the joint action of the teacher's mind and the scholar's mind. A teacher teaches at all, only so far as he causes this coactive energy of the pupil's mind.

EDUCATIONAL INTELLIGENCE.

CANADA.

—Miss Rose Perkins has been engaged by the Orillia Board of School Trustees as Teacher for the South Ward School.

—Miss M. T. Scott has resigned her position in the Strathroy Public Schools, having been appointed resident teacher in the In-

stitute for the Blind at Brantford, at a salary of \$600 per annum and board.

—The regular monthly meeting of the 'Georgian Bay Teachers' Association was held at Collingwood, Sept. 11th. Mr. Wood read an essay on the "Study of Classics," in which he endeavored to show

that the study of science and of our language furnishes as good a training for the mind as classics, with more practical benefit.

—The annual picnic of the Orillia Separate School was held Tuesday, September 21st, in the Asylum grove. A considerable number of people were present. The weather was chilly and threatening, otherwise no doubt the attendance would have been much larger. The little ones present, however, appeared to enjoy themselves very much, entering with great zest into the various games. Ample justice was done to the good things provided by the thoughtful mammas. Much credit is due to Miss German, the popular teacher, for her exertions, which contributed greatly to the success of the entertainment.

—A meeting of Exeter District Teachers' Institute was held in the school house, Exeter, recently. After the meeting was duly organized, Mr. McAndrew gave a lesson in simple proportion. Mr. Strang illustrated his method of teaching history. Rev. Mr. Gracey read a very able and instructive paper on "Our Public School Teachers," for which the cordial thanks of the Institute and an honorary membership were tendered him. Programme for next meeting:—"Book-keeping," Mr. Hobkirk; address, Rev. W. H. Gane; Messrs. Snell and Huston, subjects to be chosen. Debate—Resolved, That Township Boards are preferable to the present system. Election of officers. Institute adjourned till second Saturday in November, at 10 o'clock a.m.

—The regular meeting of the Ottawa Teachers' Association was held in the Central School East, on Saturday the 11th Sept. The chair was taken at 2.30 p.m. by the President Mr. Archibald Lee. The order of business for the day was the election of officers, and the following members were elected:—

President Mr. Archibald Smirl
1st Vice-President . . Mr. J. W. McDowell
2nd do . . Miss Steacy
Secretary Miss J. McMaster
Ass't Secretary Miss A. M. Living
Treasurer Mr. D. Robertson
Librarian Mr. E. D. Parlow
Ed. School Mr's. Jo. . Mr. A. Lee

Directors. — Messrs. J. McMillan, J. Martin, W. A. Duncan, and Misses L. Rothwell, and M. E. Butterworth.

Mr. McMillan gave notice that he would introduce as a subject for discussion at the next meeting—the question of admitting reporters to the meetings of the Council of Public Instruction. After passing some accounts the Association was adjourned.—
J. McMASTER, Secretary.

—The Bosanquet and Plympton Teachers' Association held their regular quarterly meeting at Forest, on Saturday the 18th ult. Mr. Wm. Donaghy, Vice-President took the chair at 10 a.m. The greater part of the forenoon session was occupied in transacting business and discussing the solution of an arithmetical question introduced by the President. In the afternoon the programme was taken up. It was rather short owing to the absence of two of the members. Mr. John McTavish was the first on the list. He explained his method of teaching addition and multiplication which was favorably received by the meeting. Mr. Wm. Mills next read an excellent essay on "What teachers should read and why." The following resolution was then read and unanimously carried:—
Moved by Mr. Wm. Donaghy, seconded by Mr. A. McDonald and resolved, "That as Messrs. W. and D. Cornell, are about leaving the teacher's profession to enter another, we, the members of this association, of which they have hitherto been connected, do hereby express our regret at their removal from our midst and wish them success in their new profession." Miss Alma Wood was elected Librarian. Programme for next meeting, Mr. George Sherman, Analysis; Wm. Donaghy, Geography of Europe; Wm. Norton, Reading; A. McDonald, Grammar without text book; Wm. Johnson, Vulgar Fractions; Sir Merriot, Penmanship. The Association then adjourned to meet on the second Saturday of December next.—
A. McDONALD, Sec. Treasurer.

—The *Journal of Education* has the following notice:—As already intimated in the May number of the *Journal*, the Council of Public Instruction have *struck off* the list of approved books, the following:—

Peck Ganot's Natural Philosophy.
Davidson's Animal Kingdom.
Collier's English Literature.

The following books were at the same authorized:—

English Grammar, Primer, by Rev. R. Morris.

Lessons in Elementary Physics, by Balfour Stewart, LL.D.

Physics, by Balfour Stewart, LL. D. (Science Primers.)

Elementary Mechanics, including Statics and Dynamics, by J. B. Cherriman, M.A.

Elementary Statics, by J. Hamblin Smith, M.A.

Elementary Hydrostatics, by J. Hamblin Smith, M.A.

Outlines of Natural History, by H. Alleyne Nicholson, M.D.

Physiology (Science Primers) by M. Foster, M.A., M.D.

Lessons in Elementary Physiology, by Professor Huxley.

Physical Geography, by A. Geikie, L.L.D. (Science Primers.)

Geology, by Arch'd Geikie, LL.D.

Introductory Text-Book of Physical Geography, by David Page, F.R.S.E. (for High Schools).

Chemistry, by H. E. Roscoe, (Science Primers).

History of English Literature, by Wm. Spalding, A.M.

Craik's English Language and Literature.
Freeman's European History.

Latin.—Dr. Wm. Smith's Series, I., II., III., IV., and his smaller Grammar of the Latin language.

Arnold's First and Second Latin Books ; the English editions, or revised and corrected, by J. A. Spencer.

Harkness' Introductory Latin Book.

do Latin Reader.

do Latin Grammar.

Bryce's Series of Reading Books.

J. Esmond Riddle's Latin Dictionary.

Greek.—Dr. Wm. Smith Initia Græca.

Curtius' Smaller Grammar.

Farrar's Greek Syntax.

Greek Lexicon, Liddel & Scott, smaller and larger editions.

Schmitz's Ancient History (retained at present.)

Pillans' First Steps in Classical Geography.

Dr. W. Smith's Smaller Classical Dictionary of Biography, Mythology and Geography.

Dr. W. Smith's Dictionary of Greek and Roman Antiquities.

Mr. Vere Foster's two series of Drawing Books, but the Council desire to invite the attention of the teachers to the great benefits recognized as resulting from teaching children at an early stage to draw from the objects themselves, instead of from drawings.

Memorandum.—If the substitution of new books for those disallowed, cannot at once be accomplished without great inconvenience, a reasonable time may be given, with the understanding that the changes will be made as speedily as they can, consistently with the welfare of the school. It is not intended to *enforce* the change of text-books either in High or Public Schools during the first year, or without the consent of the Trustees and of the Inspectors.

Where two books are allowed in the same subject, a discretion is permitted, which should be exercised by the Master, with the concurrence of the Trustees and of the Inspector, which will enable him to meet the complaints as to the cost of changing text-books.

The geographical text-books are undergoing revision, and no change is yet authorized in that subject, or in the French.

Due notice will be given as to the time when the new scheme of payment by results will come into operation in the High Schools, and the new programmes are as yet incomplete.

CHOICE MISCELLANY.

—The process of inferring unknown truths from those already known should be required of every pupil.

—The pupils of a grammar school in Nashua, N.H., are awarded two credit marks

for every error found in the local newspaper.

—Talk with parents about their children. Many parents can give you useful hints about teaching. Urge the parents to send

their children to school regularly, and to talk with them about their studies.

—Teachers do not always inquire sufficiently into the causes of failure in the preparation of school lessons. Careful examination into the matter often reveals need for sympathy and aid rather than cause for censure. The trouble often lies back of the school, in the conditions of the home, the requirements for outside parental organization. Study each individual case as far as practicable.

—A lady teacher took her class in geography and began with the town in which the pupils lived, locating their houses and the principal public buildings. Then each pupil was assigned some special topic, upon which to obtain all possible information. One took the foundry, and learned the number of men employed there, the kind of iron manufactured, etc. Another took a particular kind of business, like banking, and so on. When the town had been thoroughly studied, then the county was taken up, and finally the State. For information the pupils resorted to books and to conversations with their parents and friends.

A HERO.—There is enough of heroism and nerve in the way a Tennessee locomotive engineer met his death to temper with sympathy the judgment which his foolhardiness deserves. He was employed on the Georgia and East Tennessee railroad, and was cautiously working his way over the track with a passenger train just after the recent floods had subsided. He reached Sweetwater Creek, over which a temporary bridge had been built in place of the one washed away by the swollen waters. It seemed insecure, and he feared to risk his train and his passengers in crossing it; so uncoupling the engine from its tender, and ordering the fireman to leave his post, that but one life might be endangered, he dashed at full speed for the other bank. There were moments of breathless suspense, then a crash of timbers, an explosion, a cloud of steam, and a wrecked engine. The engineer was seen no more; the rushing river into which he fell swept his body far away, leaving only his name, David Halloway, to memorize his generous but reckless act.

THE EDUCATED MAN.—It is important to have correct views in regard to the funda-

mental principles that underlie any subject that is under investigation. Therefore, when we ask who is the educated man, we should look into the etymology of the word education. It is derived from the Latin *educere*, which is a compound word composed of *e* or *ex* from, or out of, and *ducere* to lead. Thus the primary meaning of the word education is the process of leading out, and a well educated man is one who is well led out. This definition does not harmonize with the popular idea that education is a pouring in process, and a well educated man is one who mentally is a well filled man. Yet we believe the former is the correct definition. A man may be a walking encyclopedia of fact, he may be a mathematical necromancer and yet have no legitimate claim to the honors of an educated man. He may be a well read man; he may have perused the prominent works of the day, and his memory may be such that he can retain what he reads; he may have completed a prescribed course of study, and have as handles to his name, any number of letters of the alphabet, and after all he may have no just claims to true scholarship.

An educated man is one who has so thoroughly drawn himself out that he knows what manner of man he is, and thus comprehending himself, by means of that knowledge, can read others and thus see the fitness of things in all the varied relations of life. This is sometimes called common sense—and does not always go with book learning—but of the two is preferable. In a truly educated mind the appetites, desires and emotions are under the complete control of the will, which in turn is a willing subject to an enlightened, conscientious reason. The mind of an educated man is trained to analyze the relations of life, and thus comprehending his responsibilities he is able to discharge his obligations in such a way as the most completely to fulfil his mission of life. Let parent and teacher remember that only a small part of the child's education is obtained from books; that the most important part is that which pertains to the heart, to the emotional nature of man, is obtained from daily contact with the world.

SOME SUGGESTIONS.—1. If you would have no drones in your school, talk at each recitation to the dullest in your class, and

use all your ingenuity in endeavoring to make him comprehend. The others, then, will be sure to understand.

2. Make each exercise as attractive as possible. Think out your methods beforehand, and illustrate freely.

3. Cultivate self-control. Never be led into confusion, and above all be in earnest.

4. Be cheerful, and smile often. A teacher with a long face casts a gloom over everything, and eventually chills the young mind and closes the young heart.

5. Use simple language when you explain lessons. Long words are thrown away in the school-room.

6. Thoroughly test each pupil on the lesson, and do not be afraid of repetition. Review every day, or much time will be lost.

7. Do not try to teach too much : better teach a little, and teach it well.

8. Endeavor to make your pupils understand the meaning of what they study. Probe the matter to the bottom, and get at the real knowledge of your scholars.

9. Cultivate the understanding, and do not appeal to the memory directly.

10. Lay the foundation of knowledge firm and well.

11. Impart right principles, and lead your pupils to higher levels, to a nobler range of thought. Endeavor to accomplish all that skill, intelligence, and love can suggest.

12. Teach your pupils to fight manfully in the warfare of good against evil, truth against error ; and, above all, let the eternal principles of right and wrong govern your own life and form a part of your own character. If you do this, you will sow beside all waters, and eventually bring home your sheaves with rejoicing.—*Maine Journal of Education.*

A LESSON TO TEACH. — It is a sad thing that we find among children so much hardheartedness and indifference to the feelings of others. But it can hardly be a matter of surprise when we recall the training in this direction which so many of them receive. Too often they hear matters made the subject of mirth or ridicule which should call forth a sigh or a tear for others' misfortunes. The unseasonable garment which poverty has compelled some poor child to wear ; the sad sight of a downcast

drunkard's child steadying the homeward steps of her father ; the privations and even the sufferings of others are spoken of lightly, if not mirthfully. Our poor dumb friends had sore need of the eloquent apostle who has opened his mouth so effectively in their behalf of late years, and it has not been the least of his labors to protect them from cruelty at the hands of children.

If parents will not teach these blessed lessons of sympathy and tenderness, it becomes doubly the teacher's duty to supply as far as he can the omission. He should instruct them to "respect the burden" wherever it is met in this burdened world. There is nothing more lovely, in young or old, than this delicate regard for the feelings of others ; yet, is it not rather the exception than the rule ? It is not every class of young ladies who would have done as did a class in Chicago, when a young colored girl entered the room and stood for some time in a diffident way beside the door. They sent a note to the superintendent requesting to have her put in their class, and they made room for her politely and cordially.

Endeavor to establish a moral sentiment among those who gather weekly about you that shall incite them to just such little acts of Christian courtesy. Teach them that "God is no respecter of persons" in the sense that man discriminates. "A gold ring and goodly apparel" are nothing beside the dress of the heart. If they would be Christlike they must be pitiful and tender-hearted toward all who need their sympathy.

You will need to bring home the lesson by abundant and close illustrations. They will be plenty and ready-made to your hand if you will only appropriate them. Correct errors in this direction with all loving kindness and you will run small risk of giving offence. If you can make a careless heart feel, you have gained quite an important point.—*S. S. Times.*

TEACHERS' INSTITUTES.—The time nears when teachers' institutes most flourish, and we are moved to add a word to our annual talks upon the topic. They are the only professional schools attended by the great mass of those who most need normal training ; and we have had for years a growing sense of their value, and also of the enormous aggregate waste of time, energy and

money by reason of these meetings, which a little forethought and intelligence would save, if not utilize. Notwithstanding this, the institute-system grows in the esteem of educational leaders, and we of late have read many good words for it. We submit again some suggestions for their organization and conduct.

1. Fix the time with care. Interfere with schools in session as little as possible. But do not definitely settle the appointment until it is ascertained when a trained assistant or conductor can be procured.

2. Employ at least one experienced lecturer, in addition to local aids. In many cases the latter may be practical and capable, but their voices are familiar, their influence has hardly the weight of a stranger's, and they often have to meet personal prejudices or positive enmities among their hearers, which go far to make their labors useless. Do not think it necessary to assign exercises to every "prominent" teacher in the county. Compliments to them are well enough; but they should not be paid at the expense of a body of teachers, whose time is precious and whose patience will otherwise be taxed sufficiently. Let no one, not a trained worker, take the floor for an exercise without abundant notice and adequate preparation. Have no elocutionary or other ground and lofty tumbling in extra branches, unless an occasional recreation or evening entertainment. We have known a costly and large institute in which all interest centered upon a distinguished elocutionist, which was yet apparently worthless, for all professional purposes of the members. But if a truly practical, sensible, many-sided man is procurable, who can take in the situation and give the teachers just what they need and in such shape that they can take it to their school-rooms and use it as an instrument of progress, he is the man for the work, whatever his specialty may be.

3. Advertise the meeting thoroughly. Try to reach every teacher, present and prospective, in the county. Make special effort to get out teachers known to be in the drag, and candidates indifferently prepared for the responsible work they purpose.

4. Organize the institute off-hand, with as little equipment of machinery as possible. It is to be a school, not a town meeting, and

needs no elaborate corps of officers and committees. These may be appointed as occasion for them seems to arise. Drop the critics. No teacher of the teachers ought to have his petty lingual slips publicly paraded, or errors imagined or invented to his prejudice (as is often done) when none such exist. Nothing will break his usefulness in the institute quicker than this.

5. Let the programme cover methods of instruction (not the facts, to any large extent) in all the branches taught in primary and country schools, with something of school government, the philosophy of education, and other general matters. It ought not to stretch much beyond. Technical and abstract lectures on physiology, mathematical geography, the merely curious points of grammar, and the like, are valueless, in the professional view. The conductor, not a committee, should arrange the programme. Whatever is assigned, let it begin and close exactly at the time appointed. Everything about an institute should teach; and not the least of the important things to be taught, directly and be unconscious tuition, is punctuality.

6. To the members to-be we say: Review your work and get clear definitions of your needs. They are very likely the needs of others, and you may safely ask one of the institute-teachers to treat of them specially. Go armed with note-book and pencil, and have ear intent and mind open to receive every useful hint. Prove all things: hold fast to that which is good. Be in your seat on time the first day, and at every session throughout, if possible. At proper times, start pleasant talks with your neighbors, whether previously acquainted or not. Contribute all you can to the success of the occasion.—*Michigan Teacher.*

SCHOOL MANAGEMENT.—Whispering, for instance, is generally considered a common nuisance, and one will soon find it necessary to say something about it. One can, in many ways, show to a school that universal indulgence in this habit impedes their progress. When they have been brought to see its bad features, they should be asked, or advised, to discontinue it. All but four or five, perhaps, will readily follow one's wishes, and endeavor to do what their judgment tells them is best.

What shall be done with the four or five who continue the practice? Frequently,

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during the day, we see them whisper, and, apparently, thinking themselves cunning. Is it best to give them a reprimand, or correct them in the presence of the rest of the school? I think not. But let each be seen alone, if possible, without the knowledge of any other pupil. He may be asked if he thinks whispering or communication, so-called, in any form, helps a school or in any manner conduces to his advancement. He can but say no. Then he may be asked if he thinks it best to practise it, and if one is in earnest he will receive a negative answer. Having got him to express an opinion adverse to it, he may be asked if he is willing to stop it. By proceeding in some such way, I have never found one who has not shown a willingness, and even a desire, to stop it, and has tried to correct the habit.

After all this, there may be one or two who will continue it. Let them be taken as before. In the previous talks they denounced the practice; this can be used as a lever to conduct another conversation.

They may be asked, if on reconsidering what they had said, they have come to the conclusion that their expressed opinion was made without due consideration, and, upon reflection, they believe that whispering is beneficial to a school, or, at least, not injurious. Very likely, they will repeat what they said about it before, but declare they whispered "before they thought." Now, it may be well to ascertain whether they are sincere in the desire to wipe out the habit, after which one can suggest a change of seat, removed from temptation, thus avoiding the ill-feeling, on the part of the pupil, that usually attends such a change on account of mischief. But I have noticed in my experience that nine pupils who find it impossible to correct the habit with the present surroundings request a change as often as one waits my recommendation.

The question is asked "Why not take all who are guilty of the same offence and deal with them at the same time?" It is because of a trait of character possessed by many, if not all. It is that which prevents one from changing a certain course of action for fear of the remarks and ridicule of those who accompany him. If a person changes at all he wants his fellows to believe it voluntary.

Let me draw a picture frequently seen in

the school-room. At some time during the day, or just before dismissal, I call the names of the unruly ones and tell them to remain "after-school." The rest passed out, and on the way to the door, each glances at the wrong-doers and smiles, while they, by their looks, have assumed the character of being persecuted for a righteous cause. After the school has gone, I deal with them as I deem proper, and they go off together laughing among themselves at the leniency shown them, or swearing vengeance at my harshness, and plotting to be even the next day. As they meet their fellows on the street, or at school, on the morrow, they are interrogated as to what the "old fellow" said, which is told, a laugh enjoyed, and "I don't care" expressed; meantime, their determination to show to all that no little talk, or severe measures can bring them under is strengthened. By taking them separately and secretly, this can be avoided.—*Chicago Teacher.*

THE TEACHER'S SOLILOQUY.

To teach, or not to teach, that is the question:

Whether 'tis nobler in the mind to suffer,
The cares and sorrows that our pupils give
Or fly to arms against a sea of troubles,
And by resigning end them? But stop,—
what then?

No worse; and by resigning know we end
The heartache, and the thousand common
insults

That pedagogues are heirs to; 'tis a consummation

Devoutly to be wished. But stop,—what then?

To beg! perchance to starve;—aye, there's the rub

For when from school released what
-dreams may come

Which with his class, poor foolish man
Ne'er thought of one before,

Must make him pause; there's the respect
That makes us hold our occupations,

For who would bear the school girl's jeers
and scoffs,

Meddlesome Trustees, the Inspector's
usual power,

The pangs of despised zeal,—our frequent
pay—

The insolence of mothers, and the spurs,
That anxious toil from the unthankful gets

When freedom he himself could take
 By a mere notice? Who would endure
 our life,
 To sigh and drag along in such a path,
 But that the dread of something yet un-
 known,
 The fear of what has been the fate
 Of many of our race, puzzles the will ;
 And makes us rather moan beneath the ills
 we have
 Than fly to others that we know not of?
 Thus contemplation does make cowards of
 us all,
 And thus the very germ of resolution
 Is shorn of power by the pale cast of
 thought,
 And every spark of enterprise conspicuously
 absent
 Points out our coming destiny.

SOCRATES.

"A TEACHER'S EVENING PRAYER."

Father ! let me come to Thee
 With the closing day ;
 Mind and body both are weary,
 Give me rest I pray—
 That sweet rest Thy loved ones know,
 Who walk with Thee here below.

All day long I've been surrounded,
 By the young and gay ;

Onward I have tried to lead them,
 In the pleasant way,
 Where fair flowers of Virtue blow,
 Where the fruits of Knowledge grow.

But alas ! I'm weak and wayworn—
 Oft aside I turn ;
 Many are the bitter lessons
 I'm compelled to learn,
 When meek Patience hides her face,
 And to Passion yields her place.

Sorrow oftimes clasps my hands
 With the morning light ;
 Walking ever at my side,
 Till the dark'ning night—
 Telling me my standard high,
 I, through weakness come not nigh.

Father, pardon my shortcomings,
 Be my staff and stay,
 Give me of the Heavenly manna,
 Feed me, day by day.
 Let Thy presence with me bide,
 Thou alone my steps can guide.

Throw the mantle of Thy love
 Round my cherished band—
 Teacher, scholars, one and all,
 Take us by the hand ;
 While I lead them, lead Thou me,
 Father, Guide, and Teacher be !

TEACHERS' DESK.

J. C. GLASHAN, ESQ., EDITOR.

Contributors to the 'Desk' will oblige by observing the following rules :

1. To send questions for insertion on separate sheets from those containing answers to questions already proposed.

2. To write on one side of the paper.

3. To write their names on every sheet.

ANSWERS TO CORRESPONDENTS.

J. S. DUNDON, Cherrywood.

Balfour Stewart's *Elementary Physics* ; Mac-Millan & Co. \$1.35, is perhaps the best small work. It would be well to read also, *Heat as a Mode of Motion*, *On sound*, and *Lectures in America*, all by Tyndall. *How to Tell the Parts of Speech* (\$0.60) and *How to Parse* (1.05.), both

by Abbott ; Seeley and Jackson, London. The American edition of Latham's handbook is far inferior to the first issued English edition.

ANSWERS.

97. Define an acid. Classify alumina.

The publishing of text-books on the physical sciences seems to have become epidemic, and the "Manual of Elementary Chemistry" would almost seem to be the most virulent (malignant ?) form of the disease. Now when one *young* in a science writes a book, he is sure to make some wonderful improvements on all his predecessors especially in the exactness of his classification and definitions, just as the same exactness accompanied the early days of nearly all the physical sciences, when knowledge was but

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slight and views were narrow. Turning to the various definitions of acid and base proposed in the numerous Manuals of Chemistry lately issued from the press, we find this well exemplified. "No antithesis in science was more firmly established a hundred years ago than that of acid and alkali, or, as we should now say of acid and base. But in the progress of research it was found that one and the same body could fulfil either of these functions according to circumstances. Thus alumina in contact with a body more basic than itself—such as potassa or soda—plays the part of an acid; but if brought together with a substance of a more decidedly acid character—such as the sulphuric or nitric—it acts as a base. Thus the old absolute view of acid and alkali as two classes, mutually exclusive and essentially antithetical, has passed away, and the terms have acquired a mere relative significance."*

Now many of our would-be expounders of chemistry overlooking or not fully understanding that "the terms have acquired a mere relative significance" have labored most ingeniously to give absolute definitions. Let us examine one, that judging from the answers sent to our question, has become popular at least in Ontario. "An acid is a salt of hydrogen." There would immediately arise in the mind of a well trained student, one accustomed to think and to work, not to swallow words, the questions, — What is a salt, † and how am I to distinguish a salt of hydrogen from any other compound of hydrogen. The first of these questions would be that of the thinker, and if he waited to settle it ere proceeding to the worker's question, he would probably never get very far in chemistry. However we will leave it with those accepting the definition to follow out the definition of salt, and of the terms employed in it, merely asking them when done to substitute in the definition of acid, for all technical terms their definitions until all technical terms are eliminated if possible. (In every case we have reduced we find the word acid on both sides! So much for the value of these definitions.)

Turning to the other question, imagine a chemist on discovering a new compound and desiring to settle whether he shall rank it in the acid series, gravely answering himself, Well I must ascertain whether it is a salt of hydrogen. The manifest absurdity of such a proceeding does away with any

necessity for discussing the definition from this point of view.

But since we must talk of acids and bases it is necessary to define what an acid and what a base is. True and we may do this in two ways. First, by defining the series to which these compounds belong, and then the relative position which two of them must hold in the series to be in respect of each other acid and base. Second, we may define by a test, which will show whether a body belongs to the series, and what its rank is in that series, compared with a standard taken as neutral or zero, (the origin.)

A. Defining a hydrate to be a compound formed on the type $H-(OH)$ by substitution for either radical, if we arrange the hydrates in a series beginning with that containing the most highly electro-positive radical, it will be found that those with strongly electro-positive radicals are bases, those with strongly electro-negative radicals are acids, while those towards the middle of the series are acids, to those at the beginning, but basic in respect to those towards the end.

B. The acids "possess an acid (sour) taste and have the property of turning blue litmus-solution red." (Roscoe.)

The former is a theoretical definition; for an excellent elementary examination of it and of the difficulties connected with it we must refer our readers to Lecture XII of "The New Chemistry by J. P. Cooke, International Series." (Note that while in oxy-acids it is the hydrogen atom that is replaced, in the hydro-chloric type, it is the hydroxyl molecule.)

Definition B is the working definition, that used by chemists and one which is quite sufficient for any elementary text-book, for in chemistry as in all the physical sciences *practice should with beginners keep somewhat ahead of theory and give to theory the questions to be answered, the problems to be solved.* Let the student learn how to distinguish an acid when he meets with one and let his definition be based on that. Let theory come as experience points to the necessity for it. The teacher should be thoroughly versed both in theory and practice for the same reason that a guide should know the road he is travelling and the best routes to the place to which he would lead his charge. An example here is that the teacher should know and in passing call his beginner's attention to the fact that every acid and every base contains hydrogen and may be written as a hydrate. By-and-by combining these and other facts (purposely selected and noted) he will get the pupil to frame the hypothesis that these compounds must contain hydrogen, and testing his hypothesis he may raise it to the theory on

* The Quarterly Journal of Science, No. XLV. page 65.

† In the modern chemistry, the word salt, although still used as a descriptive name, has no technical meaning. *The New Chemistry by J. P. Cooke, page 288 note.*

which definition *A* is based. And now let definition *A* be given,—it will now have for him a meaning.

We have given more space to this answer than the question would of itself justify, but we have noticed a tendency to accept as improvements definitions and descriptions that involve technical terms, as little or even less understood than the terms defined, and this too in works for beginners. The consequence is cramming with words, the worst kind of cramming, and too often cramming with what is false. We remember a teacher objecting to an Elementary Chemistry on the ground that it gave the old and not the new definition of an acid, yet on cross-questioning him it was discovered that all his ideas of an acid were really based on the old definition, and that he had not so far digested the new one as to recognize that while gelatinous silica, silicic acid is an acid, insoluble silica, a different substance, is not, for he actually objected that insoluble silica is not sour. Neither does it contain hydrogen. The only good point in the new definition is that it places acids among the hydrogen compounds, although it omits the type.

(Litmus paper is highly sensitive only when it contains the red principle combined with sub-carbonate of potash; commercial litmus paper often contains instead the sub-carbonate of lime forming a compound far less sensitive, in fact comparatively inert. Remove the calcium by immersing the paper in a weak solution of hydro-chloric acid.

The litmus paper test is at best a comparatively rude one, M. Shoenbein gives the following, which is of extreme delicacy. Act on iodide of amyl with lepidine forming cyanine blue. Treat the cyanine blue with soda, dissolve one part of the product in one hundred parts of alcohol, add to the solution twice its volume of water. This test will show the presence of carbonic acid in distilled water that has been merely breathed upon. Redden with an acid and we have a test for bases that will detect the trace of oxide of lead that is dissolved by water.

PROBLEMS.

113. A party consisting of twelve persons, men, women, boys, and girls stay at an inn. On settling their bill, \$12 in all, the men pay \$4 each, the women \$2 each, the boys \$½ and the girls \$¼ each. How many of each sex were there?

D. HICKS, Rose Hall.

114. A banker borrows at 3½ per cent. payable yearly and lends at 5 per cent. interest payable quarterly. He gains in one year £441. How much does he borrow?

E. T. HEWSON, Garnet.

115. Which is the greater—the cube root of 69 or the fourth root of 283. Solve by multiplication.

EDITOR.

CURIOSITIES.

6. Find the forms for two cubes whose sum is a square, also for two cubes whose difference is a square.

Our friends appear not to have cared to attack these problems which seem to be a little beyond the common Diophantine Analysis. We give the results, can they obtain them?

$$10 \ 2 \{ (m^2 + 3n^2) (m-3n)(m+n) - 12m^2 n^2 \} \\ \text{and } 16 \{ (m^2 + 3n^2) + 12m^2 n^2 \} \\ 20 \ 2 \{ (m^2 + 3n^2) (m+3n)(m+n) - 12m^2 n^2 \} \\ \text{and } 16 \{ (m^2 + 3n^2) + 12m^2 n^2 \}$$

We have in addition to 2°.

$$\{ (m^4 - 3n^4) + 6m^2 n^2 \}^3 - \{ (m^4 - 3n^4) - 6m^2 n^2 \}^3 \\ = 36m^2 n^2 (m^2 + 3n^2)^2$$

$$\{ (m^2 + 3n^2) (m+3n) (m+n) \}^3 \\ - \{ 4mn(m^2 + 3n^2) \}^3 = \text{square.}$$

Putting $m = n = 1$ in these latter and throwing out common factors gives

$$1^3 + 2^3 = 3^2 \text{ and } 3^3 - 7^3 = 13^2.$$

7. Solve

$$x^x = .207879457...$$

Neither have we received the solution of this curiosity.

It is $x = j$ where j means the square root of negative unity. The interpretation is simple enough in double-algebra, but we have not space to enter on it.

SCHOOL BOOKS.

We have received from Mr. Wm. Bryce, Bookseller, London, specimens of Bartholomew's Primary School Drawing Cards and Slate. They are excellent and should be introduced into every school. The Cards are in three Nos. 10 c's. each. The slate of various sizes is about double the price of an ordinary slate, but is more strongly framed and protected at the corners with India rubber pads. It will in the end prove cheaper than the common slate not being so apt to break, besides it adds the comfort of being noiseless and is far finer in texture than the Faber slate.

NOTE.—Since the above was put in type we have received a letter from Mr. H. D. Johnson, of Exeter, in which he objects to the solution of Problem 4 of the First Class Arithmetic, page 266, September No. Mr. Johnson holds "that to make 25 per cent. currency on the purchase"

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means "to make 25 per cent. currency reckoned on the purchase money." We understood it to mean "to make on the broadcloth purchased, 25 per cent. currency" taking 'the purchase' to be the goods purchased; and holding that if a profit of 25 per cent. is made it is made on the total investment, no matter how the nominal rate is struck. Thus in a well conducted general store it is reckoned that an average of 30 per cent. struck on the prime cost yields about 10 per cent. clear profit. (Discussions on co-operative stores). Those who adopt Mr. Johnson's view, which is certainly founded on the commercial way of striking a profit will substitute $(1.50 + .25)$ for 1.50×1.25 , in the solution given in the last num-

ber, and consequently, deduct 1-15th from the former answer, leaving \$9.054+. Mr. Johnson also points out that the answer given to 10 (a) is wrong, being the cost of fencing but one side of the square. Multiply by 4 for the correct answer, \$521.4355. It seems possible there may be a misprint in 10 (a) as issued by the Central Board. Read 52 acres 1731.56 yds. for 52 acres 173,156 yds. and the result comes out exactly \$402.72.

We hope others of our readers will not be satisfied by merely following through our processes, but will, like Mr. Johnson, test the accuracy of our reasoning, and work out the numerical calculations for themselves.

 EDITOR'S DRAWER.

—We have received the Annual Report of J. W. Simonds, Esq., Superintendent of Public Instruction for New Hampshire. It is a well printed volume of 400 pages, and contains a large amount of statistical and other information. We may refer to it more at length in a future issue.

—A writer in the *Globe* censures the Central Board for the length of time taken in awarding the First Class Certificates. This is scarcely fair. The members of the Board were entitled to some little relaxation during the holidays, and besides we know that two of them were prostrated with illness during a part of the time.

—We this month adopt a new system of mailing by which the address of each subscriber is printed, and also the No. to which the subscription is paid. Everyone can see from this exactly how his or her account stands. For instance, the present No., as may be seen on the cover, is 34. If the number after your name is 34 or over, your subscription is paid, but if under 34, you may know that you are in arrears, and we trust this gentle hint will be a sufficient reminder to induce you to remit at once the amount of your indebtedness.

WIDE AWAKE, an illustrated magazine for Boys and Girls, is on our table. It is profusely

illustrated, and brimful of choice matter for the juveniles. It contains entertaining original papers on the animal kingdom, the men, women, and children of strange countries, short stories of home life and adventure (by the most captivating story tellers), delightful serial stories, the finest poems, sketches of great men of the day and of history, articles on children's etiquette, pleasant editorial talks, music, and hints for learners, articles on the great industries, fancy work, scrap bag, amusing guess-work, &c. Published by D. Lothrop & Co. Boston, at \$2 a year.

—A good deal is said just now through the Public Press in regard to the propriety of requiring the Central Board of Examiners to examine the Second Class papers, for the whole Province. A doubt is expressed by some that the Central Board would be unequal to a task of such magnitude. If such should be the case, why not increase the number of Examiners? Or let the TEST subjects be first read and all other papers rejected. In that case a few Examiners could easily do the work. At all events, whether the Central Board would need to be increased or not, Second Class Certificates should issue from the same Examining Committee, and the Council of Public Instruction should make all necessary provision to bring about that result.

—W. Mackintosh, Esq., Inspector, North Hastings requests us to correct an error which appeared in our report of the proceedings of the Ontario Teachers' Association. In the September No. on page 281, first column, our report says: "Mr. W. Mackintosh moved in amendment, 'That in the opinion of this Association the Council of Public Instruction should issue a regulation definitely giving Local Boards of Examiners the power of exacting a minimum of not less than 50 per cent. of the aggregate number of marks in the subjects of arithmetic and grammar.'" The motion should read as follows: "That in the opinion of this Association the Council of Public Instruction should issue a regulation definitely giving Local Boards of Examiners the power of exacting a minimum which shall in no case be higher than 50 per cent. of the aggregate number of marks in each of the subjects of arithmetic and grammar." What Mr. Mackintosh objected to was binding all Boards to exact a certain percentage in arithmetic and grammar. In some counties teachers are scarce enough as it is. Raise the standard and we will have fewer. In other counties Third Class Teachers are getting to be a nuisance. Give Boards the power to act as their circumstances demand. Raise the standard where needed. Keep it as it is where teachers are scarce.

—At the opening of the Ottawa Normal School, the important announcement was made to the public by the Hon. Attorney-General, that it was decided to supercede the Rev. Dr. Ryerson as Chief Superintendent of Education, by the Hon. Adam Crooks, as Minister of Education. We are aware that this course was frequently urged upon the Government by the present Chief—that as far back as 1868, Dr. Ryerson offered to resign in favor of any Minister the Government might appoint to take charge of the Education Department, but we were glad to observe that such offers were persistently refused; not that we were unwilling that Dr. Ryerson should resign, but we were decidedly opposed to the idea of entrusting our educational interests to the control of any man who was dependent for his position upon the political humours of the day. We believe the success of our Public School System, has been largely owing to the independent position which the Chief Superintendent was always able to take in educational matters.

Although the legislation which he proposed from time to time always *appeared* to emanate from the Government, yet, as it rested upon the recommendation of the Chief, and was of necessity merely *introduced* by the Government, that political acrimony which so frequently mixes itself up with legislation was avoided, both parties being prepared to discuss the matter as one entirely separate from party politics. In this way the defects in our School Laws, and all the improvements which experience suggested, were pointed out, without either political party being blamed for the one, or credited for the other.

The only argument in favor of a Minister of Education is, that it is necessary in order fully to carry out the idea of Responsible Government. It is held that a Department with so much power, patronage and business, should be *directly* responsible to the country. This is true in theory, but it is quite possible that the evils growing out of *direct* responsibility will be much greater, than any that have yet arisen from the want of direct responsibility. Should it follow, and we cannot see it as possible to be otherwise, that educational matters will come within the political arena, each Minister that takes up the Educational portfolio will be likely to propose a number of amendments to the School Law, simply to show the country that he is a working Minister, and the Government of which he is a member will be expected to see that his suggestions are carried into effect. Local grievances about Teachers' salaries and the removal of school sites, and a thousand trifling matters, will be made the occasion of a political contest, and men with narrow ideas on educational subjects will bring the pressure of political support to bear upon candidates whose convictions on such matters might not always be of the most lucid character. It was no fault of the former system that Dr. Ryerson was a political gladiator; naturally of a combative disposition, he must fight. It was a relief to him to break a lance with somebody. But his successor might not be similarly disposed. The occasions for political pamphleteering might not present themselves, and there could be no reason on that score for refusing to appoint a successor to the present incumbent. Let it not be supposed that we object to Mr. Crooks personally. What we do object to is the appointment of a Minister of Education, instead of a Chief Superintendent, and for reasons already assigned.