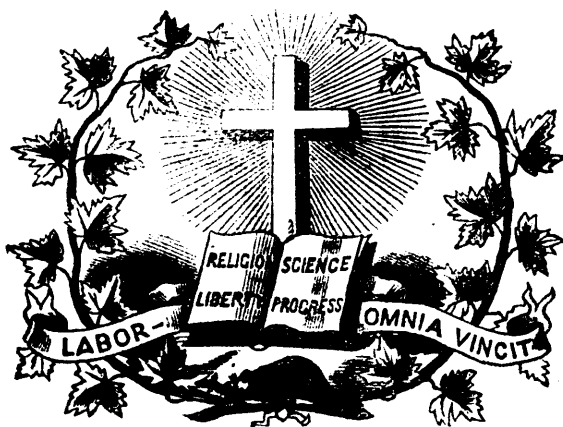


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On Physical Education: Its Neglect, Effects and Promotion. (1)

(Continued.)

III. Effects of physical training on physical, intellectual, and moral development.

I purpose now to examine more in detail the effects of systematic training on physical, and thus on intellectual and moral, development.

1. Influence of gymnastics on physical development.

"A perfect state of health," says Dr. Parkes, in his *Manual of Hygiene*, "implies that every organ has its due share of exercise. If this is deficient, nutrition suffers, the organ lessens in size, and more, degenerates. If it be excessive, nutrition, at first apparently vigorous, becomes at last abnormal, and also causes degeneration. Every organ has its special stimulus, which excites its action; and if this stimulus is perfectly normal as to quantity and quality, perfect health is necessarily the result..... The action of the voluntary muscles is necessary for the perfect exercise of all organs. For circulation of the blood, its formation and destruction, are profoundly influenced by the movement of the voluntary muscles.

(1) A paper read by Professor D. Schaible, F. C. P., before the Royal College of Preceptors, London.

Without this muscular movement, health must inevitably be lost."

The voluntary muscles.—The local effect is the growth of the muscles; they become firmer, and respond more readily to volition. When we exercise the arm, *e. g.*, by handling a club, or by striking with a hammer, or rapidly turning a wheel, the limb becomes the seat of a considerable activity: its bulk increases; heat is developed; and, if the skin be sensitive, and the capillary system vigorous, a ruddy glow is diffused over it, and a more or less abundant perspiration succeeds. If the limb is not accustomed to muscular exertion, lassitude presently sets in. An effort of the will may overcome this first feeling of fatigue, until one more imperious demands rest. Then, at a longer or shorter interval, everything returns to its normal state. Fatigue or stiffness disappears last. By the habitual practice of the same movements, the limb becomes the seat of a continued activity, of a more active circulation and nutrition; in a word, it becomes bigger. The growth of the muscles, however, has a limit. If the limb is gradually accustomed to the exercise, it becomes able to resist, to a considerable extent, the feeling of fatigue. But the too frequent repetition of one particular exercise, or the excessive exercise of a single muscle or group of muscles, results in a diminution, wasting. It appears that this is less the case when *all* the muscles of the body are equally exercised. But in any case, prolonged or too great exertion, without due intervals of rest, injures the nutrition of the muscles, and they become flaccid.

Thus moderate and gradual exercise leads to the progressive development of the muscular system, while abuse of it induces atrophy. Look at the thin legs of a man who walks to excess—the lean arms of certain workmen or labourers, exhausted by fatigue. But exercise must not only be moderate and gradual, it ought also to be general; *i. e.*, *all* muscles, and not single groups, should be brought into play. One side exercise of certain muscles causes atrophy of the others. Smiths, fencing masters, and others, often have right arms of extraordinary bulk, the legs of dancers are extravagantly developed, the shoulders of porters are like those of Atlas, while the muscles of the other parts of the body are shrivelled.

The general effects of exercise are analogous to the local effects, viz., fluxionary movement towards the outer periphery, acceleration of the pulse and respiratory movements, perspiration, &c.

In passing on to describe the effects of exercise on certain organs of the body, I avail myself again, in a condensed form, of Dr. Parkes' excellent Manual of Hygiene.

The lungs.—The most important effect of muscular exercise is produced on the lungs. The pulmonary circulation, the quantity of air inspired and of carbonic acid expired, is greatly increased. Thus, a man inhales, under ordinary circumstances, 480 cubic inches of air per minute: if he walks four miles an hour, he inhales 2,400 cubic inches; at six miles an hour, 3,360 cubic inches; the amount of carbonic acid in the expired air increases in proportion. With fair exertion for 10 hours a day the amount of carbon given off in 24 hours would be increased about one-third over that given off in the same time during rest.

Thus muscular exercise is necessary for a due elimination of carbon from the body; and it is plain that, in a state of prolonged rest, either the quantity of carboniferous food must be reduced, or carbon will accumulate in the system.

Excessive and ill-directed exertion may lead to congestion of the lungs, and even hæmoptysis. Deficient exercise, on the other hand, is one of the causes which produce those nutritional deteriorations in the lungs that are classed as tuberculous.

The heart and blood vessels.—The action of the heart increases rapidly in force and frequency, and the flow of blood through all parts of the body, including the heart itself, is augmented. The amount of increase is usually from 10 to 30 beats, but occasionally much more. After exercise, the heart's action must be carefully watched, and the exercise should be discontinued if the pulsations become extremely quick (from 120 to 140 per minute) and irregular. Excessive exercise leads to affection of the heart, rupture, palpitation, hypertrophy in many cases, and more rarely valvular disease. Injuries to vessels may also result from sudden or prolonged exercise. Deficient exercise leads to weakening of the heart's action and to fatty degeneration.

The skin.—The skin becomes red from turgescence of the vessels, perspiration is increased; water, chloride of sodium, and acids being given off abundantly. Evaporation reduces and regulates the heat of the body, which would otherwise soon become excessive; so that the bodily temperature rises little above the average. If anything check the evaporation, the bodily heat increases, and soon languor comes on and exertion becomes irksome.

During exercise there is little danger of chill under almost any circumstances; but when the exertion is over, there is then great danger of chill, because the heat of the body rapidly declines below the normal amount, while the evaporation from the skin, still further abstracting the heat, continues.

The nervous system.—There is no doubt that great bodily exertion is quite consistent with extreme mental activity. Considering that perfect nutrition is not possible without bodily activity, it may be inferred that a fair amount of exercise is necessary for the perfect performance of mental work.

The digestive system.—The appetite largely increases with exercise, especially for meat and fat. Digestion is more perfect, and probably a larger development of force is obtained from an equal quantity of food, than in a state of rest. The circulation through the liver increases, and the abdominal circulation is carried on with more vigour.

The metamorphosis of tissue.—The weight of the body is lessened by exertion, owing to the increased excretion of carbon, nitrogen, water and salts. The renewal of the muscles appears to take place only during rest; and they require apparently much rest, especially weak muscles.

The muscles, after exercise, easily absorb and retain water. Water taken after exertion does not pass off as usual by the kidneys or the skin; and instead of causing an augmented metamorphosis, as it does in a state of rest, it produces no effect whatever. It is probable that it enters into the composition of the muscles from which water has been passing so rapidly during their exercise.

Thus, as has been seen from the above statements from Dr. Parkes, exercise stimulates the nutritive functions, accelerates secretion, increases animal heat, and is an efficacious means of counteracting extremes of temperature. At the same time it sharpens the external senses, promotes gaiety and vivacity, and induces refreshing sleep.

Is the strengthening of the constitution the definitive result of exercise? It is true the athletes were frequently subject to maladies, and were only moderately efficient soldiers. They had, as a rule, indifferent constitutions. But this was rather due to exaggerated and one-sided exercise, to the violation of all hygienic rules, as well as to a life of idleness and excess. Agesilaus, feeble and sickly at his birth, was on the point of being exposed to die, and only owed his life to a movement of maternal pity. By the practice of gymnastics, he became capable of resisting the greatest fatigues of war. But we must distinguish between force proper and force of resistance. There is a difference between being strong and being robust. Gymnastics bestow less easily the second quality than the first. The robust man owes in some part his vigour to the vigour of his native constitution; special aptitude to meet the rigour of the elements, and fatigues joined to privations, is not imparted by gymnastics, but only fostered by them. But to restrict the effects of gymnastics within exact limits, is not to contest their importance and usefulness.

In fortifying the constitution, gymnastics exercise a very beneficial influence, as prophylactics of many diseases, upon their cure and on convalescence. They are salutary in epidemics, when bodily activity is often the most efficacious means to stir up mental energy. They are efficacious against scrofula, rachitis, against arthritic affections followed by ankyloses, against chlorosis, chorea, and against most nervous affections. On delicate chests gymnastics have a very beneficial effect. In fact, a well regulated course of exercises is acknowledged to be an important remedial measure in threatened phthisis.

There are, however, several maladies which preclude the use of gymnastics, such as all cases of inflammation, where rest is the first condition of treatment, organic affections of the heart and of the large vessels, advanced phthisis, &c. But in the first stages of the latter disease gentle and cautious exercise has been prescribed with success.

It may be imagined that gymnastics, which render all the functions of the body more energetic, might themselves become a source of disease, unless carried out with certain precautions and according to hygienic rules. I will point out certain rules, the observance of which I consider highly necessary.

During exercise the action of the lungs should be perfectly free; not the least impediment should be offered to the free play of the chest and the action of the respiratory muscles. The action of the lungs should be watched when men are being trained for exertion; as soon as the respiration becomes laborious, and especially if there be sighing, the lungs are becoming congested, and rest is

necessary. The great increase of the excretion of carbonic acid renders a much larger amount of pure air necessary. In every covered building where exercise is taken, the ventilation must therefore be kept up to the greatest possible extent, so soon does the air become vitiated.

In commencing an unaccustomed exercise, the heart must be closely watched; excessive rapidity (120 to 140 beats per minute), inequality, and irregularity will indicate that rest, and then more gradual exercise, is necessary, in order that the heart may be accustomed to the work.

The skin should be kept extremely clean. During exercise it may be exposed, but immediately afterwards, or in the intervals of exertion, it should be covered sufficiently well to prevent the least feeling of chill on the surface. Also during cold and rainy weather the body ought to be well protected, and damp places should be avoided. The clothes should be of light woolen material, and made roomy, so as not to impede the circulation at any point. No braces nor neckties should be worn, and the shoes should be supple and without nails.

Exercise should never be taken upon a full stomach, nor immediately after eating; for not only may serious effects thus ensue, but at such times the activity of the circulation should be concentrated on the stomach for the work of digestion. During exercise water is the only liquid to be taken. Spirits lessen the excretion of the pulmonary carbonic acid, and are therefore hurtful. The great increase of carbon excreted demands an increase of carbon to be supplied in the food. This is best given in the form of fat, a substance absolutely essential for the nutrition of muscular fibre. The quantity of nutriment must therefore be increased, especially of nitrogenous substances, fats and salts. The effects of exercise on digestion are greatly promoted, if it be taken in the open air, and it is then a most valuable remedy for certain forms of dyspepsia. Contrary to old prejudices, water is absolutely necessary for the working muscles. The proper way is to let them have it in small quantities frequently. Thus two dangers are avoided, viz., the too rapid passage of a large quantity of cold water into the stomach and blood, and the taking more than is necessary, because less is really taken in this way than if the thirst be restrained. If the water is very cold, it may be held in the mouth a minute or more before swallowing it.

All muscles, and not a single group or groups, should be brought into play; and periods of exercise must be alternated, especially in early training, with long intervals of rest. Before taking violent exercise, some gentler preparatory exercises should always precede, the object of which is to give pliancy to the limbs. A short foot-race is also a good preparative. The muscles, thereby warmed and relaxed, contract more readily. The duration, alternation, and extent of the exercises ought to be regulated by a well-trained instructor. A good instructor ought to know how to diversify the movements, to give rest to the extensor muscles, by the action of the flexors; to those of the upper parts by the exercise of the lower; in short, to know thoroughly the different capacities of the different sets of muscles. In this way he can make his pupils perform continued and severe exercises during an hour or more. He must further know how to lead on gradually the weak and the beginners from the easier to the most severe exercises.

After exercise, care should be taken not to rest in places where the temperature is too high or too low, and particularly to avoid damps and draughts. Bathing of the body with lukewarm or cold water is very beneficial after exercise. Nothing is more suitable to revive exhausted strength than cold ablutions, provided that the skin be properly dried: or, better still, rubbed with a piece of

flannel in order to keep up in it a certain activity, and prevent injurious reaction. The ancients made great use of unguents and friction, which had the effect of rendering the skin supple, and promoting circulation; while the oil and dust, with which the athletes covered themselves, formed for them some kind of protective envelope against chill.

The system and period of preparation, usually termed training, and by many considered a most necessary preparation for athletic sports, is quite useless, and often injurious. Among the ancients—with the exception of the professional athletes—there was no training. With them exercises were *continuous*, and were not alternated with periods of complete idleness. The best training is to lead a life which keeps a man ready for action at any time. Plain and regular food, without restriction to one fixed diet; temperance; systematic, continuous exercise, not pushed to excess; avoidance of tobacco, or its use in great moderation; great cleanliness, are all that is required for training.

The rules of gymnastics ought to be adapted to the individual differences and to the varying conditions of life, viz:—

(1) *To temperament.* The sanguine temperament requires moderate exercise, in order to avoid active congestion; the nervous temperament should be subdued and regulated in its actions by fatigue; the lymphatic temperament needs active movement in all seasons.

(2) *To age.* Natural exercise suffices for the child. Regular instruction in gymnastics should only begin at the age of *ten* or *twelve*. During adolescence, exercise tempers precocity and regulates the respiratory functions. By its means the man of mature age avoids obesity and undue development of the abdominal organs. It imparts a new elasticity to the languishing functions of old age (though in the case of old men the condition of the heart and vessels, *as to rigidity*, should be regarded). Thus all ages are benefited by gymnastics.

(3) *To sex.* Gymnastics develop strength and grace in both sexes; but they must, of course, be less severe for females. To young girls especially they offer decided advantages. But girls and women should avoid violent shocks or concussions, especially those produced by leaping, and which might even produce fatal consequences. To women especially Goethe's words may be applied: "Nur aus vollendeter Kraft spricht Anmuth hervor."

(4) *To habit and profession.* With regard to the intensity and duration of gymnastic exercises, gradual increase is to be observed, having regard particularly to the calling of each individual. A youth, or a man with sedentary habits, must proceed in a different way from a man who leads an active life. But with all, gradual and systematic increase is necessary.

Certain professions exercise more or less the body; but the daily work bears upon certain muscles only. There is neither ponderation nor equilibrium in the system of their muscular action. Many workmen exercise their muscles indeed, but in workshops and factories filled with a deleterious atmosphere. With them exercise in the open air would not only not be useless, but actually beneficial. In certain trades, the smith's for example, an extraordinary development of certain muscles is produced by the nature of his work. While his right arm is immensely increased in size, the muscles of the trunk and legs are often emaciated; and in consequence of the repetition of the same movement, and the neglect of other exercises, these men are not strong in a general sense, nor healthy, and not unfrequently become hump-backed. In callings of a higher order, among clerks and literary men, when sedentary life is not counterbalanced by

bodily exercise, a host of maladies are developed, such as apoplexies, gastralgies, visceral affections, gravel, gout, hæmorrhoids, &c. In his work, "*Sur la santé des gens de lettres*," Tissot points to the pernicious influence of the stooping position on the organs of respiration, and of circulation in the abdominal viscera. "All literary men," he says, "ought to impose upon themselves the duty of devoting every day an hour or two to exercise."

The beneficial effects of physical exercise may be shortly summed up as follows:

(1) Sound lasting *health*, resulting from the harmonious co-operation and development of all the organs.

(2) *Strength* of all the muscles alike, not of a few, as is the case with artisans and labourers.

(3) *Skill*, which consists in the great flexibility and mobility of the body, ready to carry into instant execution the mandate of the will. A point of great importance in all professions, and particularly the military.

(4) *Endurance*, a consequence of the above.

2. Influence of gymnastics on the moral and intellectual development.

"If one wishes to work upon the understanding of a pupil," says Rousseau, "one must first work upon the forces which the former is to rule. Exercise his body, render it healthy and strong, in order to be able to render it wise and reasonable; let him work, run, shout, be in constant motion; let him first be a man by gaiety, and he will soon be it also by reason."

Cheerfulness and mirth are found only in a healthy body, and under their rule the intellectual faculties attain a quicker and more vigorous growth. With a cheerful spirit we think and judge more acutely and correctly.

The children bring cheerfulness and mirth, as a natural gift, into school, provided they have not already been suppressed by an unnatural education. At school these dispositions ought to be cultivated and encouraged by games and exercises. Long hours of intense and fatiguing study, without exercise intervening, suppress cheerfulness, and with it the pleasure in and disposition to study. The school then becomes a prison; learning becomes forced labour, leading either to torpidity or unnatural efforts. The development of the body is arrested. There is no harmony in the development of the body and the intellect. But add to instruction exhilarating games and exercises, as a systematic recreation after intellectual work, and there will be a different tale to tell.

From another point of view, also, instruction will be far more successful, if gymnastics were a regular branch of instruction. In gymnastics the teachers would possess an excellent means of discipline. During gymnastic exercises the attention of the pupils is kept continually on the stretch; eye and ear are intent upon the master during the common exercises. This attention is, as a rule, transferred from the gymnasium to the school room; the teacher commands tranquillity and order, and his order is instantly obeyed. In such a school disorder, inattention, disobedience, and rudeness have been found to be comparatively rare.

The object of school life ought to be the training up of the young to *intellectual, moral, and physical* maturity. Our schools ought to counteract and extirpate one of the greatest evils of our times, viz., enervation, with its pernicious consequences. Enervation weakens will, courage, self-confidence. Under its influence the mind becomes the slave of the body. Strength and health, produced by exercise, on the contrary produce resolution, energy, courage, and firmness of character.

We read with admiration of the character, courage, and patriotism of the ancient Greeks; but we quite forget

what produced these qualities. It was, to a great degree, gymnastics which produced among them those beautiful traits of patriotism, of self-sacrifice and devotion, of which we read. It was with confidence in the well-trained citizens of his country that Lycurgus answered the reproach of having left Sparta without walls: "The citizens of Sparta must be the walls." To mention only one modern example. The first who took up arms in Germany against Napoleon I., at the rising of the German nation, were the pupils of "Father Jahn," the founder of modern gymnastics in Germany.

Gymnastics awaken the sense for the *beautiful and graceful*. Attitude and movement of the body during exercises lead to it. In the gymnasium man strives after the perfect and beautiful. Every æsthetical representation acts both on body and mind. Among the Greeks the sense for the beautiful was chiefly roused by gymnastics.

Emulation is another fruit of gymnastics. Emulation, in a good sense, is of no little importance for the training of energetic youth. Solon says on this point to Anacharsis: "If we were to banish from human life this love of fame, what dost thou think that we should gain thereby? Who would then have still a desire to perform some brilliant deed?"

Through gymnastics, moreover, *we improve our social life, and widen the circle of worthy occupations*. Popular festivals, of a character far different from horse-races and the like, would soon follow the general introduction of gymnastics into school and social life, and contribute not a little to raise the tone and manners of society.

Dr. Werner, a German author, illustrates the influence of gymnastics on the moral and intellectual development in the following succession of causes and effects:—

Health of the body	Cheerfulness of mind.
Hardening of the body . .	Manliness of mind.
Strength and skill	Presence of mind and courage.
Activity of body	Activity of mind.
Fine development of body .	Beauty of soul.
Acuteness of the senses . .	Strength of the thinking faculty.

3. Influence of gymnastics on professional ability.

Love of work, and skill in work, are the fruits of a good physical and intellectual education. Where there are active and industrious citizens, prosperity exists. This love of work ought to be awakened early at school. The youth of the lower classes, rendered active, industrious, and skilful in the gymnasium connected with the school, would be far different from what they are now. There would be fewer idlers, fewer claiming the support of their fellow-men.

With regard to health, I have said enough on this point. We know that gymnastics are not only a preventive against diseases, but they are effectual also to cure many of them. Why not devote at least equal care and attention to the gymnasium, as to the hospital? It is not better and cheaper also to fill the former than the latter.

Military preparatory exercises in the gymnasium, under able direction, would be useful not only from a pedagogical, but also from a technical and economical point of view. They would serve as a preparatory military training, and they would render the soldier and volunteer more able and apt for his profession.

IV. Promotion of physical education.

The greatest impediment in the way of a general introduction of gymnastics is the prejudice that they are both useless and dangerous. Useless in schools in which games such as cricket, &c., are general, and better than gymnastics; dangerous, on account of the accidents to which gymnasts are exposed.

I have described the effects of gymnastics. There is

scarcely a muscle in the body which cannot be exercised and strengthened by means of them. Their effects on the body are general and thorough. This is not the case with games. Excellent as the latter are, they are not sufficient to develop systematically the whole muscular system. They are excellent as supplementing gymnastics, but can never stand in their stead. They could never be attached to the school as gymnastics may be; for whilst it would be an easy thing to provide for even the lowest class of school a covered gymnasium in which hundreds of children might together or in detachments go through their exercises, the establishment of a playground large enough in every school in the country, and the daily practice *all the year round and in all weathers* of games of all the children of each school during a limited time, is an utter impossibility. Thus, games are, and will always be, an excellent pastime for the well to do classes, practised, not regularly and daily, but at intervals; but they can never be, a substitute for gymnastics.

They are not limited only, as is sometimes imagined, to such instruments as the horizontal bar, parallel bars, &c. They comprise marching, foot races, or running in rank and file, leaping, lifting and throwing of weights, dragging and carrying of loads, throwing lances and javelins, climbing poles, ladders, and ropes, horse exercises, wrestling, and many other exercises, all admirably adapted to the physical development of every part of the body.

These exercises are not practised at random. In a well-conducted gymnasium they are systematically selected, succeeding each other methodically, proceeding gradually from the easy to the difficult, like *any form of mental training*. Thus the danger of overtaxing the strength of the individual is avoided. The gymnasts are classified according to their physical strength and ability. A pause follows each exercise; while violent exercises are not followed immediately by absolute rest, but by gentler ones by way of transition. Foolhardy youths are restrained from dangerous exercises. In a well-directed gymnasium every squad is under the direction of a leader, who superintends all the exercises, watches every individual, and, with the aid of an efficient assistant, during his exercise on any instrument, helps and protects him. This assistance, and the proper method of protecting the individual practising, is in itself an important branch of gymnastic training. Although I have in former years regularly attended crowded gymnasia, I have in only one instance witnessed any accident, and this was owing to the gymnast breaking the rules of the gymnasium by practising alone. I repeat, if there is a regular superintendence, and the instruments are good and well looked after, accidents are almost impossible, and certainly less frequent than on the cricket and football field.

But here I must strongly protest against the notion that a master can be dispensed with in the practice of gymnastics. It is carelessness in this particular which is dangerous; which, allowing unsystematic exercises, injures health, causes accidents, and raises prejudices against all gymnastics. In my opinion, every gymnasium ought to be closed in the absence of a master. The gymnasium is, moreover, not to be allowed to be a playground for the unrestrained gambols of youth; it should, on the contrary, be a place of the strictest discipline, where obedience, order, and systematic work prevail. It is to be a place where youth are not only physically trained, but also morally and mentally. Many of the exercises require, indeed, strict attention and quick decision. If a gymnasium is managed in such a manner, all prejudices will soon and entirely vanish. Each gymnasium ought, moreover, if practicable, to be under the superintendence of a medical man, who ought to examine every individual

with special regard to the general condition of his health. With proper care gymnastics, whilst beneficial to all, will be injurious to none.

The men who can do most for the promotion of physical education are *medical men* and *teachers*. The medical man knows the influence of exercise on the human organism: his duty is not only to heal, but to prevent illness. The teacher should know that a sound physical education has the most beneficial effect on intellectual and moral education. The teacher's duty is the training of youth, not only of his mind, but also of his body. As a rule, this branch of education has been greatly neglected. Many see its usefulness, but are unable to avail themselves of it, while others look upon it as a new burden to their already hard lot. But these latter should know that gymnastics would not be a new burden. On the contrary, they would act as a relief to their exhausting duties, and prove an excellent means of promoting discipline at the same time. But here I must add, that in primary, and even in secondary schools, gymnastics should be taught only by teachers of the regular staff, who have a thorough general education. In German schools many a teacher superintends the classical studies, history, or any other branch, and also gymnastics. This would raise in this country the character of the teacher of gymnastics, and through him the importance of this branch of education; and would greatly facilitate the general introduction of gymnastics into all schools.

A great means to popularize gymnastics are public gymnastic festivals. These have done much to promote gymnastics in Germany and Switzerland. Through them the people see and judge them. These festivals may be of two kinds. Local festivals of each society, school, or club—all in public; or festivals of associated clubs or schools. In the case of the latter, the place of meeting ought regularly to be changed, so as to enable every part of the country to witness them.

The establishment of a National Association would unite individual efforts, and produce a common united action. Such an association would admit as members representatives of all classes and professions. It would be directed by a managing board. This board, composed of eminent men and women of various vocations, especially teachers and medical men, would establish local boards in various districts and towns, which would act in harmony with it, and again constitute provincial sections. It would, further, put itself in communication with the school boards and school committees.

The managing board would establish three kinds of gymnastic meetings—local, provincial, and national—all of which would be public, and have the character of public festivals. The local and provincial meetings might be annual; the national biennial. The locality both of the provincial and national meetings should be regularly changed. The local and provincial meetings should be for gymnasts of all grades. At the national meetings the better gymnasts only of local societies should take part in the exercises.

The Central Committee ought always to be well informed of the doings of its various branches, and to keep up regular communication with the provincial boards, and these again with the local boards. The provincial exercises at meetings should be directed by experts selected respectively by the central or provincial board.

Gymnastics have hitherto been looked upon, both by the public and the teachers, as among the non essentials of education. The real advancement of gymnastics greatly depends upon their general introduction into schools. Every school board and committee ought, therefore, to

make them obligatory, both in primary and secondary schools. It is true that the want of teachers of gymnastics would be a great impediment to the immediate carrying out of such a regulation. It might, however, be made to come into operation gradually. In large towns it could be done at once.

But, in order to make gymnastics a regular branch of education, there is needed the hearty co-operation of the teacher. It is the teacher who must learn to appreciate gymnastics, and it is the teacher again who is the proper person to teach them. He who believes that a teacher needs only muscular strength and skill to be able to do this, does not understand the great pedagogical value of gymnastics. The duties of a teacher of gymnastics require not only bodily, but also mental ability. He ought to be able to teach the subject as a department of intellectual as well as of bodily training. Instruction in gymnastics should, therefore, always, be given, or at least directed, by a man with a thoroughly pedagogical education. All teachers ought, if possible, to be able to teach gymnastics.

But how are they to learn it? By the establishing of gymnasia in all the training colleges, and of special training gymnasia for teachers in all large towns. Such a plan could be best carried out by a National Association. The chief instructors in such training gymnasia ought to be men with a thorough general education—men who have studied anatomy, physiology, and hygiene—and, in particular, gentlemen. They must be able to adapt their teaching according to age and sex, and to regulate it according to anatomical and physiological laws. Lectures on anatomy and physiology, specially adapted to gymnastic exercises, should be given in such training gymnasia, by well qualified medical men.

The above remarks apply to female as well as to male teachers. Gymnastics for girls and women would be better taught by female teachers. The latter would, moreover, be better able to remove the prejudices or objections of mothers.

In universities gymnastics should be taught most completely, both theoretically and practically, with lectures on the various branches of gymnastics and their physical effects.

Thus, we should have gymnasia in every primary and secondary school and university; and, besides, a National Association, the object of which would be to form gymnastic clubs in every locality of the country, and to watch and control physical education in general.

A great impediment in the way of the introduction of gymnastics is the want of spacious open places in the vicinity of school houses. The school boards and committees should therefore require that in connection with every school house there should be an open place, offering plenty of space for the setting up of gymnastic apparatus, and for games; and not open places only, but also halls or covered play grounds, that the exercises might not be interrupted in winter or bad weather.

One large gymnasium in a small town might suffice for the schools and clubs of the neighbourhood; and in case of need, a large school-room might be used in addition for certain exercises.

At school inspections equal attention should be paid to gymnastics with other branches of education, and that not separately and by special inspectors. At school examinations, also, gymnastics should take an equal place, and marks be awarded for them, as is the case in the Royal Military Academy at Woolwich. Teachers wishing to obtain diplomas should be required to pass an examination in the theory and practice of gymnastics. The most important step towards a general introduction of gymnastics is to obtain a good class of teachers of gymnastics is to obtain a good class of teachers of gym-

nastics, who have been thoroughly trained for their duties, not only physically, but also mentally,

Is it Utopian to hope that what has once been might be again—viz., that public gymnasia might, in the course of time, become places where all classes might congregate; where popular lectures might be listened to; where artists, especially sculptors, not only should exhibit their works, but make their studies, like their great predecessors among the Greeks? Where could they find better models? Thus the public gymnasium might be the most effective means for training up youth in a general companionship, and for extinguishing the spirit of caste. Gymnastics and music are, in Plato's state, the means of education. Thus the ancient philosopher proposed to unite vigour and gentleness, to strengthen both mind and body, and to render both susceptible to harmony. Philosophy would then assume its proper place as the crowning accomplishment of man—the consciousness of a symmetrical human culture. In Germany many gymnastic and singing clubs have united, and thus entered upon the path which the greatest thinker of antiquity has indicated as the only one leading to happiness. What a blessing a similar union would be to thousands in this country, especially in the manufacturing towns, where never-ending daily toil is the life long fate of most, without any elevating, cheering break.

Tact in Teaching.

BY J. ELLIOT ROSS.

The ground intended to be covered by the caption "Tact in Teaching," is a keenness of perception to discern, and ability to perform that which some peculiar circumstances or combination of circumstances may demand in the school-room. A thousand and one little exigencies there are for which no work on teaching, however exhaustive, can provide an expedient. In such cases, the teacher without tact will be unsuccessful.

To illustrate: An orthography class is reciting. The word "George" is given. John misses it, when it passes to James, who spells it correctly. John is now required to spell it, but fails again; and though it be spelled for him a dozen times, and he attempt it as many, still he fails. Now, it will not do to call him a "dumb boy," and pass on; the teacher must have tact to enable the pupil to master the word. It has been done thus: "What are the first two letters? What are the last two?"—these questions repeated till the fact is impressed. "How many letters in the word? The two middle letters are what?"—and the word is mastered. The highest diploma which the best college in our land can bestow cannot make a successful teacher: nor, to be more precise, does it even indicate him. Some of the most learned in the profession are not embraced in the circle of the most successful. Why? They lack one of the essential qualifications of the successful teacher—*tact*. That teacher who binds himself down to the experience and methods of others is a failure, just as certainly as he who binds himself down to the text-books. Stereotyped methods will not work in the school-room any more than the text-book questions are sufficient for any single lesson. It is well that we seek and obtain the experience and methods of others; but, after all, they are simple aids when viewed in the light of their real value.

But why speak of tact? Because it is lacking in a large majority of the instructors of the present day; and this, in a measure, because it is not properly appreciated by a large majority of those having control of the employment of teachers. It is not safe to conclude that a teacher is successful simply because he holds a high-

grade certificate. Some of the greatest bunglers in the school-room can point to a normal school or college diploma, or a permanent certificate. This statement is made from personal observation. Let a man hold tenaciously to another's plan, and he is a failure; let him dare to strike out for himself and he may succeed.

The sinew of tact is education. Success will not perch upon his banner who lacks either. Yet a moderate education combined with tact will insure a greater measure of success than a liberal education without tact. Where this quality is lacking in the teacher everything is a drag, and ere long there is developed a monotony in the daily routine of study and recitation which has contributed a vast number to the pitiable band of mental dyspeptics to be found among the American youth of the nineteenth century.

Yet what can be done? The certificate of the applicant for a school does not indicate his tact, and hence, how is a Board of Control to judge? True, we have "Theory of Teaching" on the certificate, but is not that a dead letter? If the applicant has had no experience in teaching he receives "none" for "theory;" if he has taught one or two terms he receives "middling;" more than that is "good," and the next time he is examined his "theory" mark is No. 1. What an absurdity!

The "theory" mark should embrace tact, and should be obtained by examination, as well as the mark for any of the branches he is authorized by his certificate to teach. Nor would this be a difficult matter. County superintendents are, or at least should be, practical, skilful teachers. Such could easily direct the proper questions for ascertaining the amount of tact an applicant will employ in his "Theory."

The common school system is moving on, but still there is much deplorable dragging. The machinery often screeches like the "hot box" of the railroad train. It needs lubrication.—*Pour on more tact.*

Free-Hand Drawing.

The following is from the late report of Mr. A. P. Stone, Superintendent of Schools, Springfield, Mass

Hitherto, drawing has been taught and practiced to some extent in a portion of the schools, but not, I think, as a universally recognized and required exercise in the programme of school work for all the schools. Sufficient progress has been made to convince those who need convincing, of the desirableness of incorporating it more fully into the regular duties of every pupil, from the Primary grades to the High School. Within the memory of the present generation, public sentiment has undergone a great change in regard to drawing. As too often taught, or rather practiced, in our schools, not many years since, it was looked upon as an accomplishment in name rather than in reality, and as adding little or nothing to one's culture or useful knowledge. It was little else than copying, and very blindly and mechanically at that, without any knowledge of its principles, and rarely enabling those who pursued it to make it a useful art. It is now taught differently, and largely for a different purpose. Its simplest elements and principles are brought within the comprehension of children and youth, as easily as are those of arithmetic; and it is found that practice in drawing gives facility and accuracy in execution as readily and surely as in penmanship or in the mechanic arts. Its object is not, as now so generally, to make artists of those who learn it, although it is serviceable for that, as to make artisans, and to enable all persons who may have occasion for it, to embody the

conceptions of the mind in beautiful and useful forms. Hence, drawing, and especially industrial drawing, has of late been rapidly introduced into the public as well as the technical schools of our cities and large towns. The bearing of this subject upon the productiveness of a people, and upon their ability to compete successfully in the markets of the world, is of vast importance in this age of activity in the useful and ornamental arts. It is doubtful if any branch of education is to day receiving more attention in this commonwealth, than industrial drawing; and the same is true in the progressive and productive countries of Europe. Indeed, it is now regarded as the principal key to success in manufactures, in respect to superiority in design and finish.

Prof. Ware, of the Massachusetts Institute of Technology, says: "At the Universal exhibition of 1851, England found herself, by general consent, almost at the bottom of the list, among all the countries of the world, in respect to her art manufactures. Only the United States, among the great nations, stood below her. The first result of this discovery was the establishment of schools of art in every large town. At the Paris Exhibition of 1867, England stood among the foremost, and in some branches of manufacture distanced the most artistic nations. It was the schools of art, and the great collection of works of industrial art at the South Kensington Museum, that accomplished this result. The United States still held her place at the foot of the column."

The report of the French Imperial Commissioner upon technical instruction, says: "In some countries, as in Wurtemberg and Bavaria, (Nuremberg,) drawing is the special object of the schools; and the impulse it has given to all the industries requiring that art is sufficiently striking, and so generally recognized as to render evident the usefulness and necessity of this branch of instruction. A glance at the immense variety of children's toys with which Nuremberg supplies the whole world, will suffice to show the progress due to this diffusion of the art of drawing. The very smallest figures, whether men or animals, are produced with almost artistic forms; and yet all these articles are made in the cottages of the mountainous districts of the country. They find employment for the whole population, from children of tender age, as soon as they can handle a knife, to their parents; and this home manufacture, which does not interfere with field work, contribute greatly to the prosperity of a country naturally poor and sterile." It has recently been said, by one who ought to know whereof he asserts, that some of the great failures which have recently occurred among manufacturers are largely or wholly due to the fact that the companies have been obliged, of late, to sell their goods below cost because of inferiority in design. Other companies manufacturing the same kind of goods, but of superior design, find no difficulty in disposing of all the goods they can produce, and at a large profit.

A writer in a recent educational journal, in answer to the question why there is such an interest in art education, says: "It is because the great industrial exhibitions of the world, from the first one at London in 1851, to the last at Vienna, show, beyond a scintilla of doubt, that such an education is a leading factor of national prosperity. Because a large class of American manufacturers have discovered that under the leveling influence of steam transportation and telegraphy, they must be completely driven from even the home market, unless they can carry to that market in the future more beautiful products than hitherto. Indeed, nothing is so saleable as beauty. Because American artisans are learning the more artistic the work they can do, the better the wages they can command; that, in truth, there is hardly any

limit to such increase. Because they further find, in all varieties of building construction, that a knowledge only sufficient to enable them to interpret the working drawing placed in their hands, (and nearly everything is now made from a drawing,) will add one-third to their daily wages."

Curiosity in children.

"You are too inquisitive!" "Don't bother me!" "Little boys must not ask so many questions!" and numerous other like expressions of impatience at the curiosity of children, are continually heard in every household. The little ones are from day to day—in fact, from hour to hour—admonished that an awful, indescribable something called propriety—in simplicity they suppose it to be some terrible creature not of human form, probably a wild beast—was against their expression of a very natural and essential feeling. Parents, have you ever considered what it is you are thus repressing? Has it ever occurred to you that, in rooting out curiosity from your children's minds, you are plucking up by the roots the tree that is eventually to bear the beautiful flowers and sweet fruits of knowledge? Your child's mind is in that elastic condition which makes it spring forward to catch the smallest fact. The storehouse of knowledge is empty, and those busy little harvesters, the perceptions, are running wild over the fields of his observation in search of grain that may be gathered in. He finds a new object unlike any thing he has ever seen or felt before. He can learn nothing of it except from you, and with touching, confiding faith in you comes running up for information. You have some more important matter in mind; you are busy, and not to be bothered, and so, crestfallen, he goes away with wounded ambition, and perhaps a whit less affection for you. One of the little harvesters returns home empty-handed. One sheaf has been lost to the granary. Worse than all, your child has lost an opportunity—a precious thing in the brief session of life—and has received a check which may operate to restrain him from seizing future opportunities. Think of it! You may have forged the first link in a chain of circumstances that will make him a failure in life.

This may appear to be an exaggerated statement of the case. It may be contended, for instance, that parents generally show a reasonable disposition to satisfy the curiosity of their children; that to the question, "What is this, papa?" an explanatory answer is, in the great majority of cases, promptly and cheerfully given; and that it is only when the questions are multiplied to an unreasonable extent that impatience and refusal to answer follow. But this raises the question, "Can there be a limit to inquiry?" and the answer is, "None!" The desire to know as much as can be known of any thing is a perfectly rational and praiseworthy one. In fact, it is a highly important one—I had almost said the most important one. It is the entering wedge that has split the rocky wall of ignorance, and enabled the axe of observation to hew open the broad avenues of science into the very heart of the mysteries of Nature.

But this objection rests on the supposition that it is all-sufficient to answer the first few questions, the remainder being considered as relating to unimportant details. Now, the fact of the case is just the reverse. The rejected portion of the questions are, as a rule, the most important. To perceive this fact, observe the nature of the questions the child invariably asks, and the order in which he puts them. He begins by asking of a thing, "What is

it?" Then, "Is it good to eat?" If not, "Is it poisonous?" If it is, "What does it taste like?" If it is a fruit, "Where" (that is, how), "does it grow?" If another object, "How is it made?" and so on indefinitely. Here we discern a progression—rough and irregular at intervals, it may be, but still a progression—from the more general to the less general. If you answer the first two or three, and throw out the balance, you acquaint him with the general facts, and leave him ignorant of the particular facts. Now, consider that throughout the domain of knowledge, be it of literature, science, or art, the particular facts are the most important to be known. In science, he who knows only the most general facts is a mere tyro. In truth, science is the organization of particular facts, and we cannot acquire a respectable knowledge of it without engraving these upon our minds. And so it is with all other subjects, any knowledge becomes profound in proportion as we extend our acquisition of particular facts. See, then, the great error involved in your course; you are giving the child chaff while you throw away the wheat.

But at this early stage the process demands more consideration than the product. The knowledge gained by this rough, unsystematic questioning may be small—at most, it is usually vague and indefinite—nevertheless, it is unquestionably of some value. The process, however, is the earliest expression of the spirit of scientific investigation, which was once as feeble and erratic in the race as it now is in your child, but which, by gradual development in the slow lapse of centuries, at length became strong enough to rear the magnificent structure of exact science. The curiosity which induces these questions will develop or dwindle according as circumstances favor the one tendency or the other. Encouraged and intelligently directed, it will develop into a systematic inquiry after truth, ending perhaps in making its possessor a compeer of Newton or Kant. But, under habitual repression, it degenerates into mere impertinent inquisitiveness, the qualification of an idle tale-bearer. The *desideratum* is to make the child form a habit of penetrating to the root of all things.

But, it may be further contended, there are some questions which it would be manifestly improper to answer for children; for instance, such as bear upon the relations of the sexes, and kindred subjects. This is equivalent to saying that knowledge promotes immorality. The business of education is to acquaint the child with the facts of life. The facts of the class referred to constitute the most vital part of knowledge—that affecting the daily existence of each and every individual. Ignorance or misconception of these facts is productive of the gravest consequences—consequences injuring mental or bodily health, or both, as well as business prospects. It is a serious, a criminal blunder to withhold such facts from a child, or to give him wrong notions concerning them. It will not do to say that the required information will be gained, or the wrong notions corrected, later, when he is able to understand the subject. The fact that he is prompted to question on such subjects is abundant evidence that his mind is in a condition to grasp appropriate ideas, and it is the only safe indication of the proper time to communicate those ideas. It may seem a trivial thing to some parents that a child is made to believe grossly absurd and untruthful statements at the awakening of his perceptions, because he will eventually discover the facts for himself; but, to all who have observed the firm hold which early impressions take upon the mind, and the influence they wield over it, the danger of the practice is apparent. It throws away precious time, and necessitates unlearning that which has been learned, in order to acquire that which should have been

learned. And it is not by any means certain that the unlearning is ever thoroughly accomplished.

Curiosity being the earliest form of scientific inquiry, it is clear, then, that it should be carefully nurtured. Children should be encouraged not only to ask questions concerning all things, but also to ask *all* the questions concerning all things. And parents should hold themselves ready and cheerful to answer all questions; bearing in mind, however, that wrong notions are easily conveyed but difficult to correct, they should be watchful against making wrong answers either through ignorance or misconceived delicacy. When in doubt as to the correct answer, the child should be frankly told so, and requested to remember his question until an opportunity occurs to have it answered by some competent person. And it should be a parent's anxiety to have answered, in the manner indicated, all questions which he is unable to answer himself. Such a course would be sure to inspire the child's confidence in the parent, and increase his affection and admiration, while the reverse course could not fail to have the opposite effect. To cheerfully and intelligently lead a child to exhaustive inquiry in every direction will unquestionably often prove a difficult and apparently hopeless or thankless task, but overshadowing such selfish considerations should stand the solemn word DUTY.—*William E. Simmons, Jr.—(Appletons Journal.)*

Teaching vs. Hearing Lessons.

To one who is familiar with schools, the first glimpse of a class room, the first movement of a class, almost the first word spoken, reveals the character of the work done in it. Power and skill, or the lack of these, are shown in every thing done, and felt in the very air. Both manner and results bear the unmistakable want of a master, or the equally clear signs of an apprentice or artificer. And this whether the work of a class be a "common" or a "higher" subject; whether the lesson of the familiar one or a new topic. A long visit may increase interest in the class or the subject and may disclose the source of power, but the *fact* of good teaching in distinction from mere hearing of lessons is apparent on the face of things. It may not be possible to put all the points of this difference into words, for we often see and feel the force of that which we cannot state as a formal precept for another to follow, but some elements of it may be separated from the complex whole.

1. It is immediately apparent that class and teacher now come together for some *definite purpose*. Each expects something of the other. The pupil is under a sense of responsibility to the teacher, and the teacher to the pupil, and each will hold the other to his duty. There is an air of business, an attitude of attention, a silent but effective demanding, or rather expecting of attention and effort and of preparation of all that was required, together with a manifest readiness to be patient without sacrifice of thoroughness, to be rigid in requirements and conciliatory in manner, that give appearance of results. No time is wasted in delay, in dawdling, in asking and answering needless questions. Every thing needed in the class has been brought to the class, and every thing required for use, map, pointer, crayon, *paper and pencils*, is at hand. No time is wasted in getting into order, or discussing "how far we went yesterday," or whether, "this was to be skipped," or in reminding the teacher that he promised to do this and that left over from last week. The teacher and the class have met for something understood by them both, and then proceed at once to do it.

2. *The teacher knows the lesson* and knows it in such a way that he could recite as he requires the pupil to recite. He does not need to keep his eye on the book and his finger on the place. *He can do without a book*, except as problems may be taken from it, or sentences given for analysis, or as it contains the text to be translated. It more frequently lies on the desk for occasional reference than is followed letter by letter. It is evident that the teacher is master of that part of the subject, that he sees how it grows out of a preceding part and prepares the way for what follows, and he has estimated the relative importance of it, and just how much time he can afford to spare upon it. His questions show this: his explanations, clear, right to the point, sharp and sharpening, confirm it; the manifest confidence of the class in his statements and the eagerness with which they seize and appropriate instruction make it plain that they are in the habit of receiving positive statements which will bear close questioning, and which will apply directly to the case in hand. Questions asked are for information, not "to catch the teacher"; the pupil knows that he will be expected to be sure of what he claims to understand, and that the teacher will not be satisfied until every point is made clear to all.

3. Teaching does more than to ask all the questions in the book, more than to go all round the class in order every day, more than to call for all the words of the text. It finds out, now in this way and now in that, *how much the pupil knows*, not how many words he can say; what application of knowledge he can make, not merely how many rules he can repeat. The teacher's knowledge is of things, not of words; he sees things in their uses and in their relations, and they become to him signs not of learning only but of wisdom as well. And as face answers to face in the water, so the knowledge of the pupil, when a subject is finished, is seen though in different degrees to answer to his own knowledge.

4. The Teacher's knowledge of a subject is also of such sort that it gives him the basis of all needed explanations and illustrations. He knows where difficulties lurk and how they can be met. He anticipates that such a step may be too much to take at once and divides it into two. He sees the need of some special illustration to aid in grasping a principle, and he inserts what will give necessary light. He knows how much the senses enlighten the mind, and he puts a hard question with some *sensible* answer. He does not expect a child to understand the "book definition" of *horizon* unless he has first called attention to the fact that the earth and the sky *do* appear to meet at a certain distance from the observer. He does not suppose that many learners will "know for certain" how net veined leaves differ from others unless the two have been compared, nor that they will know how "to write a composition" without information about the subject of it. He has had experience of all the trials of a learner and is ready to "bear a hand" when others ask for it. You may see how quick he is to vary a question, to add to an explanation, to lead the pupil into the light, to help him to perceive how this step follows that. His fertility of resources will not please more than his readiness to notice just when those resources must be used, and when the pupil should be left to his own devices.

5. It *compels*, or shall it be rather said *inspires*? pupils to use their own powers and does not allow them to suppose that all the heavy loads are to be carried by the teacher, but of all, the pupil must carry his part and of most, the whole. The pupil studies, the pupil wrestles with difficulties, the pupil tries and tries again, and in the end, the pupil gains the victory. He is aided, he is guided, he is encouraged, and that is all; he does the

work for he is held up firmly to it and not allowed to flinch. Just here, perhaps, more than anywhere else, the power of a true teacher is shown. When a child says, "I don't know," the hearer of lessons simply *tells* him: the teacher compels him to look, at least, for the truth. When the child says, "I can't do this," the former does it for him; the latter sets him at work to do it for himself. When the child is indifferent and careless, the one weakly does his task for him or lazily lets it go undone; the other by means as various as the resources of a fertile and earnest mind, stimulates, provokes, urges him to do his task.—H. B. Buckham, M. A., in *N. Y. Educational Journal*.

THE PROTESTANT PUBLIC SCHOOL EXAMINATIONS.

PANET STREET SCHOOL.

Monday the 14th December, was the opening day of the annual Winter Examinations of the Protestant Public Schools, Montreal, which continued all the ensuing week at the different Commissioners' Schools throughout the city.

The Panet street School was visited on that day by the Commissioners: Rev. Dr. Jenkins, Chairman; Rev. Dr. Bancroft, and Mr. Lunn. Quite a number of the scholars parents and friends were also present.

The Primary Classes in the DeSalaberry Street School were first examined, in reading, arithmetic, French, and geography, in which subjects they exhibited great proficiency, the result of careful training.

The Commissioners then proceeded to examine the pupils in the intermediate and senior classes. Those in the intermediate department were examined in reading arithmetic, geography, grammar, and Scripture history, the senior scholars being examined in reading French, geography, algebra, and Latin. Both these classes passed very creditable examinations, exhibiting a knowledge of subjects of study which was not merely superficial, as is so often the case with pupils at public schools.

During the progress of the examination several pieces of music were very well sung by the scholars under leadership of Mr. Arnold, who seems to retain his old power of keeping children in order.

At the close of the examinations,

Rev. Dr. Bancroft congratulated that section of the city on possessing so good a school, and believed it would be hard to improve on it in the future. He concluded by giving some excellent advice to the scholars, and referred to the self denying exertions of the efficient staff of teachers who, under the leadership of Mr. Arnold had labored so successfully.

During the month of November three hundred and seventy scholars have been in attendance at this school.

The Board, which in 1868 had an income of only \$6,000 and employed but 17 teachers who instructed 762 scholars, now have six school buildings, employ 74 teachers, are educating 2,984 pupils, while their income has been a little over \$72,000 during the past year.

SHERBROOKE STREET SCHOOL.

Tuesday morning, 15th Dec., the examinations of the Protestant schools were continued in the presence of the Commissioners, Rev. Dr. Jenkins, Chairman, Rev. Canon Bancroft, and Mr. Lunn, the Secretary. There were also present several other gentlemen interested in the educational institutions of the city, as well as a number of the

parents and friends of the pupils. The Sherbrooke street school is quite a new building, having only been in existence since the beginning of last September, and is without doubt the handsomest Common School in the city. Before the erection of the present building the school was carried on in a rented house, which give but cramped accommodation to about 200 pupils. On the opening of the present school it was at once filled, there being now 460 scholars in attendance, and were the building much larger than it is, it would in all probability be well filled. The scholars are divided into three classes, these again being subdivided into two each, viz.—1st Primary; 2nd do: 1st Intermediate; 2nd do; and 1st and 2nd Senior.

The manner in which the examination passed off reflects great credit upon Mr. Mills, the head master, and his staff of teachers, who, to bring their scholars up to the standard which they have attained, must have worked with untiring zeal. The pupils were examined in the usual English branches, also Algebra, French and Latin, in which last three the senior class exhibited great proficiency.

At the conclusion of the examination the Rev. Canon Bancroft addressed a few words to those present, in which he stated it gave him very great pleasure to see the school in such a state of efficiency already. He paid quite a compliment to the teachers when he said that the Commissioners had done their best to secure the services of efficient teachers, and had been very successful.

Mr. Lunn also made a few remarks, after which.

The Chairman delivered a short address, in which he expressed the pleasure it gave him to witness such great progress in so short a period of time. He announced that on the morrow the British and Canadian School, Cote street, would be examined, and on Saturday, the 19th inst., an examination of pupils from the senior classes of all the schools would take place in the Mechanics' Hall.

At intervals through the examination the scholars sang several places very well, under the leadership of the different teachers.

After the benediction was pronounced, the company dispersed, every one expressing themselves delighted with the progress and standing of the scholars.

BRITISH AND CANADIAN SCHOOL, COTE STREET.

Wednesday morning 16th Dec., the examination in the Commissioners' Schools was continued, this time in the British and Canadian School, Cote street.

This School has been laboring for some time under a great disadvantage, Mr. Jordon, the head master, being for some months on leave of absence on account of ill health; but his place has been filled by the second master, Mr. Spong, under whose direction the examination took place. The order which is preserved is alike creditable to teachers and scholars, and the good feeling on the part of the pupils for those under whose tuition they are, was exhibited by the manner in which the teachers were successively cheered at the close of the examination.

The 1st and 2nd Primary, of which there are seven divisions, and the 1st and 2nd Intermediate, four divisions, were first examined by their respective teachers in the usual English branches, in the presence of the Commissioners, Rev. Dr. Jenkins, Chairman, Rev. Canon Bancroft and Mr. Lunn. Prof. Robbins was also present as well as many of the parents and friends of the pupils. The senior classes were then examined. Algebra, Geometry, French and Latin form part of their studies, and in these they acquitted themselves in a manner which left but little to be desired.

During the progress of the examination the scholars sang several pieces very well, and if there is one thing which is more deserving of praise in their singing than another it is the excellent time which is kept.

At the conclusion of the examination the Rev. Canon Bancroft addressed those present. He said that there was one thing which caused him great sorrow and it was this, the haggard and worn appearance of the teachers. Under the present system, he thought the teachers had too much work, one teacher very often having as many as fifty pupils under his or her charge. In times past teachers had but few scholars to attend to at one time, and he was sorry to see that, under the existing circumstances, they should appear overworked. He hoped they (the Commissioners) would soon be able to afford the services of more teachers. In referring to the absence of the head master, he stated that even considering the disadvantages under which the school had labored on account of the absence of their head, they deserved great credit for the manner in which the examination had been conducted.

The Chairman made a few remarks, in which he referred in complimentary terms to the Secretary, Mr. Lunn, who has been connected with the school, first in the capacity of teacher and then as one of the Board for more than fifty years. After expressing himself as perfectly satisfied with the progress of the scholars, he pronounced the Benediction and the pupils dispersed.

DORCHESTER STREET SCHOOL.

The usual Christmas examination was commenced on the morning of the 17th Dec., in the Dorchester Street School in the presence of the Rev. Dr. Jenkins, Chairman, and Rev. Canon Bancroft, Commissioners, also Prof. Robbins, and a considerable number of the friends of the pupils. This school has only been in existence for some three months, up to the time of its establishment the inhabitants of that quarter of the city having to send their children inconvenient distances to school. For some time the Commissioners had been looking about for some suitable place in which to erect a school, but being unable to find such, they purchased the building now occupied by them. The attendance at the school now numbers 178 pupils who, under the able supervision of Mr. Berwick and an efficient staff of teachers, have progressed very favourably in their studies.

The arrangement of classes in this school is somewhat different from that of the schools already examined, there being no senior classes, and therefore no higher branches of study, in which the pupils of the other schools so ably distinguished themselves. The examination was therefore conducted only in the usual English branches, with the exception of a class in French, in all of which the scholars acquitted themselves in a very creditable manner. As at the other examinations, the scholars sang several pieces very nicely, a French song that was sung causing general satisfaction.

After a few remarks by the Chairman and the Rev. Canon Bancroft the scholars dispersed. Mr. Lunn, the Secretary of the Board of Commissioners, was not present at the examination, being absent in Quebec.

ANN STREET SCHOOL.

The examination in this school Saturday morning, 19th December, passed off in a manner creditable alike to the teachers and scholars. The Board of Commissioners have every reason to feel proud, as day after day the examinations of the pupils in the different schools take place before them, and exhibit such careful training on the

part of the teachers, while the diligence of the scholars is amply manifested by the ready way in which they answer the questions put to them.

The Ann Street School, which was first established in 1852, was for years carried on in the building of a church bought for that purpose. In 1864 the school was enlarged by the addition of a wing, and in 1872 the present building was erected and the old property disposed of.

Numerically the Ann Street School is the most important one under the control of the Board of Commissioners.

The total number of pupils in attendance is about 621; 311 boys, 310 girls. The average age of the boys is 9 and 3-10; girls, 9 and 5-10. Number studying Latin, 11. Number of Jews in the school, 8; Roman Catholics, 23.

The following are the names of the teachers: S. P. Rowell, Head Master; E. Cornu, 2nd Master; Misses Barlow, Warren, McLeod, Taylor, Stephen, Johnson, Hunter, Clarke, Grafton, Reid, McGarry and Ferguson.

The following is one of the rules:—"The continuance of a child in school is conducted upon the due payment of fees, being furnished with prescribed text-books, attention to studies, respectful obedience to teachers, pleasant intercourse with school-fellows, avoidance of injury to school premises and furniture, and absence from immorality in speech and action."

EXAMINATION OF SENIOR SCHOLARS.

A public examination of the Senior Scholars of the various schools throughout the city, under the supervision of the Protestant School Board, with the exception of Point St. Charles and Dorchester St. Schools, which are below the Senior grade, was held on Saturday morning, 19th December, in the Mechanics' Hall, by Professor Robins, the Inspector, in the presence of the Commissioners and a large number of citizens and friends of education.

The names of the scholars are as follows:—

BRITISH AND CANADIAN.

Boys—John Craven, John McGregor, Albert Low, Wm. Traguir, Chas. Ennis, Wm. Studor, Wm. Thompson, Rudolph Raphael, Wm. Roadley, Jas. Gilmore, George Rorke, John Matschek, John Manschreck, Geo. Koester, Anthony Sennett, Edwin Burnett, Wm. Curran, Wm. Murray, Edwin Cathels, John Moore, Robt. Dewitt, Horace Lamb, Alfred Smylie, John Cathcart, John Hunter, John Atcheson, Thos. Brophy, Albert Sleeth, Robert Simpson, John Kermod and Henry Laphan—26.

Girls—Annie Maslin, Mary Ann Overing, Mary Ann Williams, Rebecca Elliott, Matilda Wilson, Christina J. Galt, Jessie Hamilton, Amy Laphan, Eliza Blagrove, Laura Rodger, Annie Scott, Nellie Rorke, Fannie Overing, Annie Nixon, Helena Miller, Henrietta Irving, Agnes Gilmore, Ida J. Galt, Lizzie Stone, Isabella Anderson, Alicia Dawson, Margaret Somerville, Lizzie McNaughton, Mary Ash, and Alice Dakin—25.

ROYAL ARTHUR.

Boys—Richard Costigan, Arthur Waldron, Herbert Ivanson, Alexander Costigan, Albert Smith, Albert Ivanson, Thomas Potter, John Beattie, James Ellis, Henry Smith, William Innes, Charles Dunberry, Arthur Kay, David Brooks, Stewart Cuthbert, Edwin Throsby, Edward Mathews, David Cuthbert, John Ramsey, John Burry, Richard Bentley, George McNeider, David Black, Walter McGinness, Edward Wamsley, Charles McAuley, Robert Dufferin, Charles Wardill, Ernest Mathews and James Dunberry—30.

Girls—Mary McNider, Ella Akin, Sarah Turner, Alice Stafford, Hattie Symington, Isabella Dickson, Eliza Ellis, Mary Ivanson, Lizzie Martin, Annie Riddle, Sarah Boyd, Kate Kirkman, Lucy Kirkman, Emily Pagan, Maud Lamb, Ida Robertson, Aggie King, Jane Aspinwall, Helen McDiarmid and Cora Akin—20.

SHERBROOKE STREET.

Boys—F. Foster, John Aikman, Wm. Boyle, John Campbell,

Hugh Cowan, Geo. Falconer, Augustus Harries, Walter McLea, Arthur Muir, Wm. Patrick, George Robertson, Ernest Wight, Norman Wight, Albert Ross, Isaac Hargrave, Robert Common, Christopher Sonne and Wm. Fudger—18.

Girls—Rachel Comer, Bertha Graham, Florence Lebeau, Minnie Greenshilds, Jessie Greenshilds, Fannie Hamall, Eliza Logan, Emily Logan, Sarah Lavers, Bella Picard, Katie Armstrong, Lizzie Foster, Kattie Wilson, Nellie Lloyd, Cora Parker, and Lizzie Franklin—16.

PANET STREET SCHOOL.

Boys—Walter H. Lancy, Wm. James S. McCormick, William H. Arbuckle, John H. Armstrong, Wm. S. Weldon, Wm. A. McGinness, Wm. R. Brian, T. H. Beardslee, Albert E. Taylor, Frederick Kearns, Donald Church, Joseph Smith, Stewart McNaughton, Louis Richards, Parfait Mercure, and Thomas A. Cowan.—16.

Girls—Elizabeth Reid, Agnes Warren, Elizabeth Houragen, Adelaide Mitchell, Catherine Terrill, Florence Ritchie, Carine Coursolle, Sarah Trudeau, Emma Cole, Alice Barton, Eliza Winn, Alice Richardson, Mary McCormick, and Jessie Drysdale.—14.

ANN STREET.

Boys—W. Schofield, N. Drew, T. McLeod, Geo. McLeod, Samuel Upton, Wm. Milton, C. Austin, B. Woods, A. Urquhart, W. Holmes, A. Barrow, C. Jones, W. Matthews, J. Carson, J. Rutherford, J. Robinson, F. Barlow, W. Leslie, J. Schofield, S. Kidinge, H. Leombs, S. Marshall, J. Carmichael, C. Macwood, S. Burnet, H. Cockfield, D. McCunn, Wm. Heron, W. Brereton, J. Allen, J. Given, and F. Scott.—32.

Girls—M. A. Norris, E. Elliott, M. Hyde, W. Hyde, M. Campbell, M. Scott, S. Hes, E. Gordon, T. Jobian, Katie Gardiner, E. Goodfellow, E. White, E. Cuttle, E. McFarlane, C. Ross, L. Gosling, A. Whinton, J. Barffe, P. Henthorne, S. Dennison, E. Williams, A. Bradley, S. Gibson, H. Rutherford, M. MacCunn, H. Gray, E. Reed, J. Bride, J. Laug, B. Kerr, S. Popham, L. Popham, J. Inglis and A. Clarke.—34.

RECAPITULATION.

	Boys.	Girls.	Total.
British and Canadian.....	26	25	51
Royal Arthur.....	30	20	50
Sherbrooke Street.....	18	16	34
Panet Street.....	16	14	30
Ann Street, Griffintown.....	32	34	66
Total.....	122	109	231

Shortly after nine the children commenced to arrive and were allotted their places upon tiers of seats erected for the occasion overnight. Some scenery, tastefully ornamented with evergreens, which had not been removed by the projectors of the P. I. H. Bazaar, formed a very appropriate background to the cheerful spectacle of some 400 bright intelligent faces, full of expectation at the issue of their pending examination. Each pupil wore a piece of coloured ribbon denoting the school to which he belonged. Their ages ranged between 10 and 15. The exercises commenced with the singing of a Christmas Carol, and we may here remark that the whole of the singing was admirably executed, considering that the various schools had never sung together before. Mr Berwick led the exercises, assisted by Mr. McCorkill, of the Royal Arthur School. Both gentlemen accompanied the singing on their violins, and Miss Bell presided at the organ. The pupils were then examined in expeditious and mental arithmetic by Mr. H. Arnold, of the Panet street School, the examples being shewn with facility and quickness, by means of Professor McVicar's example frame, an exceeding valuable invention for facilitating mental calculation. Two frames were worked before the audience, in order that they might test the readiness of the scholars. The readings by a boy and girl from each school; principally selections in poetry and prose from the English classics, were delivered in a manner that denoted a careful, persevering elocutionary training, and reflected great credit upon the teachers.

A piece was then dictated to the scholars by the

professor from the *Witness*, and after allowing them a short time for correcting errors, the slates were collected and distributed among the audience for inspection. Mistakes were few and trivial, while the writing was very legible. As an instance of the honesty of some of the scholars, we may mention that previous to collecting the slates they were asked to mention the mistakes they had themselves detected. One acknowledged that he had not dotted an "i," and another omitted to cross a "t," while a third mistook the pronunciation of the word "rascal." In French Mons. Cornu examined them in reading and translating, and Mons. N. Duval in grammar and phrases. The pronunciation was good, the translations fair, and the questions answered readily by all. A French song, entitled *Chantons en ce Beau Jour*, was sung very readily and with evident pleasure, especially by the girls, who, by the way, appeared the most ready scholars.

Professor Robins then proceeded to examine the scholars in theoretical and practical arithmetic. The examination ranged over Fractions, Decimals, Profit and Loss, Interest and Proportion, and considering all the circumstances under which they were placed, we think the scholars did remarkably well, especially as no one had any idea what the questions would be until they were placed on the black-board. A very pretty part song, both as to music and words, was then sung, entitled, "*Cold the blast may blow*," and received with great applause by the audience. Owing to the lateness of the hour sufficient time was not allowed for working out the examples in Algebra, consequently the work was not so satisfactory as would have been the case had more time been allowed. The first Senior were examined in the Elementary Rules, and the Second Senior in the Equations, as far as the equations of all unknown quantities. In Geometry one girl of 13 demonstrated the 20th proposition of the 1st Book, and another of 12, the 15th and 20th. A boy of 14 demonstrated the 15th.

We may add that the scholars answering the questions were, as a rule, chosen at random by the Inspector, consequently the best scholars were not brought forward, as a visit to the schools at any time would testify.

The examination being concluded.

Rev. Canon Bancroft rose and briefly addressed the assembly. He said that Professor Robins wishing to give an opportunity to the parents and public generally to witness what is being done in the schools, had caused this examination to be made, and he was sure they would agree with him when he said that the splendid army of young people before them, whose proficiency they had just witnessed speaks well for the population of Montreal and for the teachers of its schools in particular. He had attended every examination held during the present term, and felt convinced that what they had just heard and seen was but a poor specimen of what would be witnessed by visiting the schools personally. In some respects the scholars before them had fallen short of what was being done in the schools; which was but pardonable under the circumstances. Having visited the latter, he felt that the standard had been very much raised of late, and that the day had gone by when we were to go out of Canada for persons fitted to occupy any office in it.

Rev. Dr. MacVicar said that in 1865, when he joined the Board there were but two schools and 253 pupils; the last return showed 10 schools and upwards of 3,000 children under their care. The careful training of school teachers, as well as scholars, had also been attended to, and he could safely say that the present educational system of the Board was well adapted for the use of the city. Up to the present time they had practised rigid

economy, which somewhat crippled their movements. The schools at present were not sufficiently furnished, and the staff needed to be increased and also the salaries. In some instances the teachers were called upon to do the work of two, and he regretted to say the health of many had consequently been failing of late. He spoke in the highest praise of the untiring energy, patience, and professional abilities of Mr. Robins, and also that of his subordinates, and urged all friends of education to visit schools and see his admirable mode of both teaching and examining at the same time.

Mr. F. KAY referred to the excellent results of the system as practised by the Board, and regretted that it was not in their power to afford accommodation to all who applied. In conclusion he urged the need of pecuniary assistance.

Rev. Dr. JENKINS, chairman of the Board, in answer to Dr. MacVicar, said that a site had been chosen for a girls High School, and he trusted the building would soon be erected. He adverted to the fact that the Commissioners had laboured arduously and in silence, amid some misrepresentations, for the advancement of education in this city, and that not unsuccessfully. They did not desire office, and were willing to resign if need be, to give place to others; but he continued, the difficulties with which the present Board had to contend would never occur again. He wished the grumblers had been present that morning to witness the examination. It was easy to criticise without investigation, the conduct of those who laboured day and night without reward for the welfare of the public. He deeply regretted that the health of so many of the teachers had declined. He felt that the citizens were not doing justice to the teachers, who were so successfully training the future population. In speaking of the advantages enjoyed by the scholars, he adverted with pride to the fact that there was not now a respectable and capable boy in Montreal who could not go through the University of this city without fee or charge, and that soon the girls would possess the same advantage. The interesting proceedings were brought to a close by singing the National Anthem, and the audience dispersed at a quarter to two.

ST. MATTHEW'S AND GRACE CHURCH SCHOOLS.

The examinations of the St. Matthews and Grace Church Schools, at Point St. Charles, were held on the 22nd December. They collectively have an attendance of 250 pupils, employing five teachers. At present there are one first intermediate and no senior classes in these schools. The examinations were very ably conducted, and reflected very creditably upon Professor Robins, the masters and teachers. The specimens of writing exhibited were very fair, and in some cases excellent, while that written from dictation, fully sustained the evidence of the written specimens. A very interesting examination of the school under the auspices of the St. George's Y. M. C. A., of which Miss Wales is the Governess, has just been concluded. The Protestant Public Schools, which closed yesterday, will reopen on January 5 at 10 a. m.

The seven Laws of Teaching.

BY REV. J. M. GREGORY, LL. D.

1. A teacher must know thoroughly what he would teach.
2. A learner must attend with interest to what he would learn.

3. The medium must be language understood by both teacher and pupil in the same sense.

4. The truth to be taught must be related to truth already known, as we can only reach the unknown through that which is known.

5. The act of teaching is the act of arousing and guiding the self-activities of another mind so as to develop in it a certain thought or feeling.

6. The act of learning is the act of reproducing, fully and accurately in our own understanding, the ideas to be acquired.

7. The test and confirmation of teaching are to be found in repetitions and reviews.

These simple and fundamental principles may be better understood if stated as rules to be observed by the teacher, thus :

I. Know thoroughly and familiarly whatever you would teach.

II. Gain and keep the attention of your pupils, and excite their interest in the subject.

III. Use language which your pupils fully understand, and clearly explain every new word required.

IV. Begin with what is already known, and proceed to the unknown by easy and natural steps.

V. Excite the self-activities of the pupils, and lead them to discover the truth for themselves.

VI. Require pupils to restate, fully and correctly, in their own language, and with their own proofs and illustrations, the truth taught them.

VII. Review, review, review, carefully, thoroughly, repeatedly, with fresh consideration and thought.

These laws underlie and control all successful teaching. Nothing need be added to them; nothing can be safely taken away. No one who will thoroughly master and use them need fail as a teacher, provided he will also maintain the good order which is required to give free and undisturbed action to these laws.—S. S. *Teacher.*

POETRY.

The Fisherman's Summons.

(From All The Year Round.)

The sea is calling, calling,
 Wife, is there a log to spare?
 Fling it down on the hearth and call them in.
 The boys and girls with their merry din,
 I am loth to leave you all just yet,
 In the light of the noise I might forget
 The voice in the evening air.
 The sea is calling, calling,
 Along the hollow shore
 I know each nook in the rocky strand,
 And the crimson weeds on the golden sand,
 And the worn old cliff where the sea pinks cling,
 And the worn old cliff where the echoes ring,
 I shall wake them never no more.

How it keeps calling, calling,
 It is never a night to sail,
 I saw the "sea-dog" over the height,
 As I strained thro' the haze my failing sight,
 And the cottage creaks and rocks well nigh,
 As the old "Fox" did in the days gone by,
 In the moan of the rising gale.

Yet it is calling, calling:
 It is hard on a soul I say,
 To go fluttering out in the cold, and the dark,
 Like the birds they tell us of, from the ark,
 While the foam flies thick on the bitter blast,
 And the angry waves roll fierce and fast,
 Where the black buoy marks the bay.

Do you hear it calling, calling?
And yet, I am none so old.
At the herring fishery but last year,
No boat beat mine for tackle and gear,
And I steered the coble past the reef,
When the broad sail shook like a withered leaf.
And the rudder chafed my hold.

Will it never stop calling, calling?
Can't you sing a song by the hearth.
A heartsome stave of a merry glass,
(Or a gallant fight, or a bonnie lass.
Don't you care for your grand-dad just so much?
Come near then, give me a hand to touch,
Still warm with the warmth of earth.

You hear it calling, calling?
Ask her why she sits and cries.
She always did when the sea was up,
She would fret, and would never take bite or sup
When I and the lads were out at night,
And she saw the breakers cresting white
Beneath the low black skies.

But then, in its calling, calling,
No summons to soul was sent,
Now—well, fetch the parson, find the book,
It is up on the shelf there if you look,
The sea has been friend, and fire, and bread,
Put me where it will tell of me, lying dead,
How it called and I rose and went.

OFFICIAL NOTICES.

Ministry of Public Instruction.

APPOINTMENTS.

The Lieutenant Governor has been pleased, by order in council, dated the 24th November last, and in virtue of the powers conferred on him by the 48th clause of chapter 15 of the Consolidated Statutes of Lower Canada, to make the following appointments of school commissioners, to wit:

SCHOOL COMMISSIONERS.

County of Bonaventure, Saint-Charles de Caplan, Mr. Cléophas Arsenault, *vice* the Reverend André Audet.

County of Gaspé, Cap-aux-Os Mr. Célestin Jacques, *vice* the Reverend M. T. A. Séguin.

County of Gaspé, Gaspé South Mr. Joseph Eden, junior, *vice* Mr. L. D. Patterson.

County of L'Assomption, Saint Roch The Reverend Thomas Dagenais, *vice* the Reverend L. M. Brassard.

County of Rimouski, Sainte-Félicité The Reverend M. Tobie Théberge, *vice* the Reverend L. A. Perrier.

County of Saguenay, River Sainte-Marguerite Messrs. Augustin Gravel and Pierre Gauthier, *vice* Messrs. William Gravel and Napoléon Gauthier.

SCHOOL TRUSTEES.

County of Quebec, Saint-Roch Nord: Thomas May, Esq., and Horatio Nelson Jones, Esq.

ERECTION OF SCHOOL MUNICIPALITY.

The Lieutenant Governor has been pleased by order in council of the 3rd December instant, and in virtue of the powers conferred on him by the 30th clause of chapter 15 of the Consolidated Statutes of Lower Canada, to unite into a district municipality for school purposes under the name of Rivière Gatineau, in the county of Ottawa, lots number nineteen, twenty, twenty one, twenty two, twenty three, twenty-four and twenty-five of the sixteenth range of township Hull, in the same county, and lots numbers four, five, six, seven, eight, nine and ten of the first range of township Wakefield, in the same county.

MISCELLANEOUS.

Sunshine.—Children need sunshine quite as much as flowers do. Half an hour is not enough. Several hours are required. The most beautiful flowers that ever studded a meadow could not be made half so beautiful without days and days of the glad light that streams through space. Light for children. Sunshine for the little elves that gladden this otherwise gloomy earth. Deal it out in generous fullness to them. Let the nursery be in the sunshine. Better plant roses on the dark side of an iceberg than rear babies and children in rooms and alleys stinted of the light that makes life.—*Herald of Health.*

A Literary Waif.—(From the *Ithaca Journal*)—In the winter of 1837, Revd. Dr. Stebbins, of Ithaca, then in the Senior Class of the Divinity School at Cambridge, Mass., was invited to deliver an address on peace before the Bowden street Young Men's Peace Society, in the old Boston Odeon. One passage from that address has been going the rounds of the newspapers from Maine to Texas, and in England, for about thirty years, sometimes with no name, and sometimes with a wrong name. Soon after it found its way to England some person published a poetical paraphrase of it in Dickens's *Household Words*. This poetry also ran the rounds of the papers in the same way, sometimes alone sometimes in connection with the original prose, but not often. We propose to give them a start together in the *Journal*, so here they go. Let them not be sundered on pain of our displeasure:

"Give me the money that has been spent in war, and I will purchase every foot of land upon the globe; I will clothe every man in an attire that kings and queens would be proud of; I will build a school-house upon every hill-side, and in every valley over the whole habitable earth; I will supply that school-house with a competent teacher; I will build an academy in every town, and endow it; I will crown every hill with a church consecrated to the promulgation of the gospel of peace; I will support in its pulpit an able teacher of righteousness, so that on every Sabbath morning the chime on one hill should answer to the chime on another, 'round the earth's broad circumference; and the voice of prayer, and the sound of praise, should ascend like an universal holocaust to heaven."
—(Stebbins.)

The Waste of War.—(From Dickens's *Household Words*)

Give me the gold that war has cost,
Before this peace expanding day—
The wasted skill the labour lost,
The mental treasure thrown away—
And I will buy each rood of soil
In every yet discovered land,
Where hunters roam, where peasants toil,
Where many peopled cities stand.

I'll clothe each shivering wretch on earth
In needful, nay, in brave attire;
Vesture befitting banquet mirth,
Which Kings might envy and admire.
In every vale, on every plain,
A school shall glad the gazer's sight,
Where every poor man's child may gain
Pure knowledge, free as air and light.

In every crowded town shall rise
Halls academic, amply graced,
Where ignorance may soon be wise,
And coarseness learn both art and taste.
To every province shall belong
Collegiate structures, and not few,
Fill'd with a truth-exploring throng,
And teachers of the good and true.

A temple to attract and teach
Shall lift its spire on every hill,
Where pious men shall feel and preach
Peace, mercy, tolerance, good-will;
Music of bells on Sabbath days
Round the whole earth shall gladly rise,
And the great Christian song of praise
Stream sweetly upward to the skies!

The late Lord Lytton.—The *hoi polloi* were not very familiar with Lord Lytton's presence. He was not often seen in the parks or other places of public resort; but in the part of Oxford street bounded at one end by the Marble Arch, and the other by the Regent-circus, he was well-known, and many a hat went off in silent greeting as he passed on his way, his brougham generally following him to the Portland Club; where he spent a couple of hours every afternoon in the season. It was in this locality I met him, two days, I think, after his name appeared in the Gazette. In later life he was generally deaf; but I said "Good morning, my lord," He heard me, and laughingly replied I was the first person who had called him by his new title.—The last time that ever I met this distinguished man was at St. Leonards, where I had gone for a short holiday. I came quite suddenly upon him one wet stormy November evening, not far from the archway by the South Saxon Hotel. It was blowing a gale of wind, and his slender figure wavered and reeled almost as he tried to make head against the blast. He had no overcoat, and that which he did wear looked, I thought, faded and shabby. I was trying to slip past him unobserved, for he never met me without stopping to say a few kind words; but he recognized me at a glance, caught hold of my arm, and asked me to come home with him to the Queen's Hotel at Hastings, where he was staying, and dine. He was without any umbrella, the rain fell in torrents, and I covered him as well as I could with mine. I found he occupied apartments on the ground floor at the hotel. They seemed in a sad state of confusion. The floor was strewn with a litter of books and papers, and copiously sprinkled with Turkish tobacco, an odor of which pervaded the air. The table was laid with covers for three, but only myself and the host sat down. He ate, I observed, but sparingly, and drank nothing but water with a dash of sherry in it. In the evening, as I was taking my departure, I came upon the German waiter who had attended at table, and hinted that the rooms might be kept in a little better order.—"Bless you, sir," said the Kellner, "the place has not been swept or dusted for a fortnight; that're gent is outrageous-like if a book or a paper is touched. The manager wants to get him away, but he has taken the rooms for a month, and won't go; and he is such good pay that our governor don't like to disoblige him." "Waiter," I said sternly, "do you know who that're gent' as you call him, is?" "Yiz, sir—no sir," replied the waiter in a breath, puzzled by the solemnity of my tone. "That is Lord Lytton," I said, "the greatest man in all England. If you see much of him, and note down carefully what he does and what he says, you may become a second Boswell." "Lor, sir," said the waiter, "you don't say so! Our manager thinks this gent is cracked: he goes out in all weathers without any greatcoat, and won't even take an umbrella; then he never examines his bills, but scribbles off a cheque on any scrap of paper that comes to hand.—It was only the day before yesterday a poor woman came with one of them bits of paper. She said the outlandish-looking gent who lived in our house had given it to her, and she did not know what to do with it. He had come into her cabin to light his pipe while her husband, a poor fisherman who was drowned in the last gale, lay there dead. He wrote it on the back of an old letter, and said hoped it would do her good. You can't think of the poor creature's surprise when I brought her back ten sovereigns which the manager gave me when he saw the paper. Surely, sir, the gent cannot be all right here;" and the waiter significantly touched his forehead. He promised to preserve a faithful diary of his lordship's proceedings; but when I returned to the hotel about two years afterwards, I found that he, like the poor fisherman, had been drowned in a storm, and left nothing behind him but a small boy his son, who had been sent to school at the expense of the hotel company, with a view of educating him for the onerous situation of a page.—*Belgravia.*

The Climate of Canada.

[From the *Toronto Globe.*]

In one way and another Canada is being more widely advertised in Britain at the present time than ever she has been before. Her climate is assailed, her soil is depreciated, her statesmen have their failings exposed and their excellences exalted, disgusted emigrants condemn, successful ones applaud, and in the midst of all the stir Canada is becoming every day better known, and her genuine attractions more appreciated, by the thoughtful and the struggling of the old world. The climate seems at present the great bugbear. That men can live and thrive in Canada is now generally recognized as beyond

dispute. But that they have at the same time a terrible struggle with the winter's cold and the summer's heat is also thought to be unquestionable. The persons more particularly concerned know nothing of such struggles, but strangers, or those who have never seen the country, know better, and therefore speak with authority. We hear a great deal about the " parching heats " and the " frozen deserts " of Canada, as if the one marvel about its inhabitants was not that they lived well but that they lived at all.—And, after all, how little ground is there for all this ado. Canadians know that they could never get along without their hard winters, and that even for merely pulverizing the soil the great severity of frost is invaluable.

Besides, how much at the very utmost can be made of this bugbear? Not much, as the following table will show. In this we have the absolutely highest and lowest temperatures at various points in Canada within the last four years, with the corresponding temperatures in London and in certain other European cities. For extremes, either of heat or cold, there does not really seem to be much to choose between any of them:—

CANADA.		Highest.	Lowest.
To.onto, Ont.....	99.2	—26.5	
Simcoe, Ont.....	98.5	—25.6	
Windsor, Ont.....	98.8	—27.1	
Montreal, Que.....	96.1	—28.0	
Quebec, Que.....	94.4	—30.5	
Huntingdon, Que.....	95.0	—30.0	
St. John, N. B.....	82.0	—21.0	
Fredericton, N. B.....	83.0	—28.0	
Bass River, N. B.....	92.0	—28.2	
Halifax, N. S.....	93.5	—14.4	
Digby, N. S.....	86.0	— 4.0	
Pictou, N. S.....	87.3	—20.0	
Charlottetown, P. E. I.....	86.4	—15.0	
Spence's Bridge, B. C.....	99.0	—10.0	
EUROPE.			
London.....	95.0	— 5.0	
Paris.....	104.0	—10.3	
Dresden.....	101.8	—25.8	
Moscow.....	94.1	—46.7	
Berlin.....	102.8	—19.8	
Geneva.....	97.2	—13.5	
Munich.....	95.0	—19.8	
Tours.....	110.4	—13.0	

The mean summer and winter temperature and annual temperature at different places in Canada and in Europe can also be seen at a glance from the following table—

	Mean Temperature.		
	Summer	Winter	Year.
Toronto, Ont.....	61.5	16.8	44.1
Simcoe, Ont.....	68.4	24.3	45.8
Windsor, Ont.....	70.2	24.8	47.3
Montreal, Que.....	69.5	18.1	44.3
Quebec.....	66.0	13.8	40.5
Huntingdon, Que.....	66.8	14.5	43.0
St. John, N. B.....	58.0	20.9	40.3
Fredericton, N. B.....	63.7	13.8	40.6
Bass River, N. B.....	63.6	15.1	39.5
Halifax, N. S.....	62.2	24.1	43.1
Digby, N. S.....	60.1	23.9	42.9
Pictou, N. S.....	62.2	20.6	41.3
Charlottetown, P. E. I.....	61.3	16.7	42.0
Spence's Bridge, B. C.....	67.1	24.6	47.3
Greenwich, Eng.....	60.4	37.1	48.9
Paris, France.....	64.7	38.4	51.3

When the mean temperature all the year round is only four degrees lower in Toronto than in Greenwich, England, there seems little room for Englishmen making a great outcry about either the cold or heat of Canada.

Book Notices.

MUSIC-PAGE SUPPLEMENT FOR 1874.

We have just received from *The Pennsylvania School Journal* a copy of the third annual Music-Page Supplement, issued by the publishers of this periodical, for gratuitous distribution to Teachers' County Institutes in all parts of the State. It contains some twelve choice selections, songs and hymns appropriate for Schools, with the music to each in four parts; as well as some sixteen or eighteen selections, the words without the music. There are music books that sell at from 35 to 50 cents that are worth less than this Supplement, which is distributed to Institutes gratuitously. *The Journal*

contains a page of music each month. Price \$1.50. It is published by J. P. Wickersham & Co., Lancaster, Pa.

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Meteorology.

Observations taken at Halifax, Nova Scotia, during the month of November, 1874; Lat: 44° 39' North; Long. 63° 36' West; height above the Sea, 125 feet, by 2nd Corporal J. T. Thompson, A. H. Corps

Barometer, Highest reading, on the 27th.....	30.514 inches.
" Lowest " 24th.....	29.036
" Range of pressure.....	1.478
" Mean for month (reduced to 32 F.).....	29.948
Thermometer, Highest reading on the 4th.....	59.6 degrees.
" Lowest " 23rd.....	11.3
" Range in month.....	48.3
" Mean of all highest.....	46.2
" " lowest.....	26.7
" " daily range.....	19.5
" " for month.....	36.4
" Highest reading in sun's rays.....	105.5
" Lowest reading on the grass.....	8.0
Hygrometer, Mean of dry bulb.....	38.7
" " wet ".....	36.0
" " dew point.....	32.4
" Elastic force of vapour.....	.183 grains.
" Vapour in a cubic foot of air.....	2.1
" " required to saturate air.....	0.6
" The figure of humidity (Sat. 100).....	.78
" Average weight of a cubic foot of air.....	555.6
Wind, Mean direction of North.....	5.0 days.
" " North East.....	1.5
" " East.....	0.0
" " South East.....	0.5
" " South.....	2.0
" " South West.....	3.0
" " West.....	7.0
" " North West.....	9.0
" " Calm.....	2.0
" Daily force.....	3.1
" " horizontal movement.....	273.1 miles.
Cloud, Mean amount of (0 to 10).....	6.2
Ozone, " (0 to 10).....	1.7
Rain, Number of days it fell.....	7
Snow.....	5
" Amount collected on ground.....	3.63 inches.
Fog, Number of days.....	0

Synopsis of Temperature, Cloud and Precipitation for the month of September, compiled at the Toronto Observatory, from Observations in the several Provinces of the Dominion of Canada:—

PROVINCE.	STATION.	Toronto. 6, 8 A. M. 2, 4, 10 & 12 P. M.	Muskoka. 7 A. M. 2 & 9 P. M.	Ontario. Ingersoll. 7 A. M. 2 & 9 P. M.	Welland. 8 A. M. 2 & 9 P. M.	Quebec. Quebec. Bi-hourly.	Huntingdon. 7 A. M. 2 & 9 P. M.	New Brunswick. St. John. Bi-hourly.	Fredericton. Tri-hourly.	Bathurst. 7 A. M. 2 & 9 P. M.	Halifax. Tri-hourly.	Sydney. Tri-hourly.	Truro. 7 A. M. 2 & 9 P. M.	Manitoba. Winnipeg. 7 A. M. 2 & 9 P. M.	B. Columbia. Spence's Bridge. Tri-hourly.	P. E. Island. Charlottetown. 8 A. M. 2 & 10 P. M.	Newfoundland. St. Johns. 8 A. M. 2 & 9 P. M.
Hours from which means are derived		6, 8 A. M. 2, 4, 10 & 12 P. M.	7 A. M. 2 & 9 P. M.	7 A. M. 2 & 9 P. M.	8 A. M. 2 & 9 P. M.	Quebec. Bi-hourly.	Huntingdon. 7 A. M. 2 & 9 P. M.	St. John. Bi-hourly.	Fredericton. Tri-hourly.	Bathurst. 7 A. M. 2 & 9 P. M.	Halifax. Tri-hourly.	Sydney. Tri-hourly.	Truro. 7 A. M. 2 & 9 P. M.	Winnipeg. 7 A. M. 2 & 9 P. M.	Spence's Bridge. Tri-hourly.	Charlottetown. 8 A. M. 2 & 10 P. M.	St. Johns. 8 A. M. 2 & 9 P. M.
Mean Temperature uncorrected for diurnal variation		63.33	60.59	63.00	66.83	57.45	59.30	57.17	57.08	55.42	57.37	54.73	55.90	52.32	59.30	57.92	54.14
Warmest day		11	10	14	13	15	10	20	29	29	7	1	20	9	4	20	30
Temperature		75.65	71.35	73.75	78.00	68.08	69.67	65.00	65.39	63.73	61.56	63.64	63.60	75.15	68.70	64.72	69.67
Cooldest day		30	21	30	36	30	21	23	28	22	23	23	28	14	12	12	13
Temperature		45.63	44.27	49.25	46.67	49.25	48.00	51.30	49.92	49.37	50.55	45.66	43.50	41.00	59.50	48.87	44.37
Mean of daily Maxima		70.24	67.07	70.77	79.57	72.23	72.23	64.90	67.87	64.80	69.35	68.91	67.07	69.33	71.27	67.07	60.57
Mean of daily Minima		51.63	51.52	54.10	54.10	49.47	51.43	49.90	46.93	44.70	49.36	45.72	47.20	43.94	48.67	30.12	47.18
Highest Temperature		88.6	87.5	94.5	90.0	81.0	83.0	80.0	76.2	71.0	79.8	74.0	76.0	88.5	84.0	76.6	72.0
Date		10	11	11	13	15	10	10	10	10	10	1	21	8	4	27	22
Lowest Temperature		39.5	30.0	38.5	38.0	87.0	36.0	41.0	36.3	34.0	40.0	31.9	34.0	28.5	41.0	42.1	34.0
Date		30	21	22	22	22	22	23	23	12	24	14	23	15	20	22	13
Percentage of Cloud		40	42	0	0	45	40	60	61	44	55	59	69	32	42	57	64
Depth of Rain in inches		1.534	3.250	2.860	2.700	1.320	3.220	2.255	2.300	1.020	5.039	4.360	4.019	1.732	0.360	4.473	3.530
Number of days in which rain fell		11	9	5	5	7	9	9	12	5	15	12	12	5	9	14	11
Depth of snow in inches		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Number of days in which snow fell		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total depth of rain and melted snow		1.534	3.250	2.860	2.700	1.320	3.220	2.255	2.300	1.020	5.039	4.360	4.019	1.732	0.360	4.473	3.530
Number of fair days		19	19	21	25	23	21	21	18	25	15	18	12	25	21	16	19

